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1.
No. 4231

1396 **United States** 1390
Circuit Court of Appeals

For the Ninth Circuit.

**D. J. MURRAY MANUFACTURING COM-
PANY, a Corporation,**

Appellant,

vs.

**SUMNER IRON WORKS, a Corporation, and
SILVERTON LUMBER COMPANY, a
Corporation,**

Appellee.


Transcript of Record.

**Upon Appeal from the United States District Court for
the District of Oregon.**

FILED

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F. D. MONCKTON



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land, Oregon,

Attorneys for Defendants and Appellees.

CITATION ON APPEAL.

United States of America,

District of Oregon,—ss.

To Sumner Iron Works and Silverton Lumber
Company, Corporations, GREETING:

WHEREAS, D. J. Murray Manufacturing Com-
pany, a Corporation, has lately appealed to the
United States Circuit Court of Appeals for the
Ninth Circuit from a decree rendered in the Dis-
trict Court of the United States for the District
of Oregon, in your favor, and has given the security
required by law;

YOU ARE, therefore, hereby, cited and admon-
ished to be and appear before said United States
Circuit Court of Appeals for the Ninth Circuit, at
San Francisco, California, within thirty days from
the date hereof, to show cause, if any there be, why

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the said decree should not be corrected, and speedy justice should not be done to the parties in that behalf.

Given under my hand, at Portland, in said District, this 5th day of March, in the year of our Lord, one thousand nine hundred and twenty-four.

R. S. BEAN,
District Judge.

Due service of the foregoing citation on appeal is hereby admitted this 5th day of March, 1924.

ATKINS & ATKINS,
Attorneys for Above-named Sumner Iron Works
and Silverton Lumber Co.

No. E.—8615. 25—301. United States Circuit Court, District of Oregon. D. J. Murray Mfg. Co. vs. Sumner Iron Works et al. Citation on Appeal.

[Endorsed]: U. S. District Court, District of Oregon. Filed Mar. 6, 1924. G. H. Marsh, Clerk.

BE IT REMEMBERED that on the 29th day of March, 1922, there was duly filed in the District Court of the United States for the District of Oregon a bill of complaint, and thereupon further proceedings were had, as follows:

In the District Court of the United States for the
District of Oregon.

D. J. MURRAY MFG. CO., a Corporation,
Plaintiff,

vs.

SUMNER IRON WORKS, a Corporation, and
SILVERTON LUMBER COMPANY,
Defendants.

BILL OF COMPLAINT.

The plaintiff, for his bill of complaint, respectfully shows and alleges:

I.

That the plaintiff is a corporation, duly organized and existing under the laws of the State of Wisconsin, and having its principal office at Wausau, Wisconsin.

II.

That the defendant, Sumner Iron Works, is a corporation duly organized and existing under the laws of the State of Washington, as plaintiff is informed and verily believes, and has its principal office at Everett, Washington, and also maintains a duly authorized agent and an office for the regular transaction of business, at Portland, Oregon.

III.

That the defendant, Silverton Lumber Co., is a corporation duly organized and existing under the laws of the State of Oregon, and has its principal office at Silverton, Oregon.

IV.

This suit is brought for the infringement of letters patent of the United States, hereinafter specified, duly granted for an invention and to restrain the defendants and each of them, from further infringement of said letters patent, and to require the defendants and each of them, to account for the profits made by them respectively by said infringement, and also to recover the damages sustained by the plaintiff by reason of the infringement.

V.

That prior to April 13, 1909, Charles E. Cleveland, then residing at Fond Du Lac, Wisconsin, was the original, first and sole inventor of a certain new and useful improvement in Log Handling Mechanism, not known or used by others in this country before his invention or discovery thereof, and not patented or described in any printed publication in this or any foreign country before his invention or discovery thereof, or more than two years prior to his application for patent therefor hereinafter recited, and not in public use or on sale in this country for more than two years prior to his application for patent therefor hereinafter recited; and that no application for a foreign patent for said invention was filed more than twelve months prior to the filing of the application for the hereinafter recited patent in this country.

VI.

That on said April 13, 1909, said Charles E. Cleveland made due application for letters patent

of the United States of America, which application was filed on the last-mentioned day under serial No. 489,675, viz., on due proceedings by the said Charles E. Cleveland and the full compliance by him with all requirements of the law thereafter, and on September 7, 1909, letters patent of the United States, No. 933,231, were duly granted to the said Charles E. Cleveland by the Commissioner of Patents of the United States, whereby there was vested in the said Charles E. Cleveland, his legal representatives and assigns, for the term of seventeen years thereafter, the exclusive right to make, use and vend the said patented improvement in log handling mechanism thruout the United States and the territories thereof. That the said letters patent at all times hereinafter mentioned, were and still are in full force and effect, and the said original letters patent are ready to be produced in court in this cause.

VII.

That thereafter and prior to the infringement of the said letters patent by the defendants hereinafter complained of the said letters patent were, for value received by the said Charles E. Cleveland, duly sold, assigned and transferred unto the above-named plaintiff and the plaintiff prior to and during the said acts of infringement on the part of the defendants, was and still is the exclusive owner of said letters patent of the improvements therein described including all claims for damages and profits for the infringement thereof.

VIII.

That the said Charles E. Cleveland, prior to the said assignment of said letters patent to the plaintiff, and the plaintiff ever since such assignment, has extensively engaged in the manufacture and sale of log handling mechanism embodying said patented invention, and duly marked and caused all its log handling mechanism involving said patented invention to be duly marked with the notice required by law as to the same being patented; and the fact of said improvements being patented is also well known to the trade in general and to each of the defendants. Furthermore the said Charles E. Cleveland, prior to said assignment, and the plaintiff since said assignment of the said letters patent to it, has invested large sums of money in connection with the manufacture and sale of log handling mechanism involving said patented improvement, and in advertising and introducing said patented improvements to the trade of the general public.

In consequence said patented improvement in log handling mechanism has become widely and favorably known to the public and particularly to persons engaged in operating saw and lumber mills, said improvement being recognized by the public and the trade as being of great practical benefit and utility. And the said Charles E. Cleveland prior to said assignment and the plaintiff since then, has manufactured and sold large numbers of said patented improvement in log handling mechanism by the reason of the public generally acknowl-

edging and acquiescing in the exclusive rights of said letters patent; and plaintiff would have continued to do a large business and make substantial profits from its said exclusive rights under said letters patent and would still continue to do so, but for the infringement of said letters patent by the defendants hereinafter complained of.

IX.

That the defendants and each of them, well knowing the premises, but in violation of the exclusive rights of the plaintiff in said letters patent, within six years prior to the commencement of this suit, have each of them knowingly and continuingly, infringed said letters patent; and said defendant Sumner Iron Works manufacturing and selling log handling mechanism embodying said patented improvement to many mills in utter disregard of the plaintiff's exclusive rights under said letters patent, including the mill of the defendant Silverton Lumber Co., and the latter defendant, confederating with the said defendant Sumner Iron Works, having used, and still using the said patented improvement in log handling mechanism in its mill at Silverton, Oregon. Whereby plaintiff has been and still is, and will be as long as said infringement continues, deprived of the just rewards and profits which it otherwise would make under said letters patent, and besides is greatly and irreparably damaged and injured in the premises; and furthermore, the defendants and each of them, by their said infringement, have made, and are continuing to make substantial profits, as plaintiff is

informed and verily believes, which belong to the plaintiff, the amount of which plaintiff cannot ascertain except by requiring the defendants to account according to the order and direction of this Court.

X.

That in order to adequately protect the rights of plaintiff in the premises it is necessary that the defendants and each of them, their officers, agents, employees and confederates, be enjoined pending this suit, and perpetually by the final decree of this Court, from the further infringement of said letters patent or in aiding or abetting in any way such infringement.

WHEREFORE plaintiff prays:

I.

That said letters patent be adjudged and decreed to be valid and that the entire right, title and interest thereof is vested in the plaintiff.

II.

That the defendants and each of them be adjudged to infringe upon said letters patent, and that each of the defendants be enjoined pending this suit, and perpetually by the final decree therein entered.

III.

That a reference be had to a Master to take and report on account of the damages and losses sustained by the plaintiff by reason of said infringement of said defendants. That the plaintiff may have judgment for such damages and losses so found, and determined as by law provided, and as

the Court may deem meet in the premises; and that the plaintiff have the costs and disbursements of this suit and such other and further relief as may be just.

D. J. MURRAY MANUFACTURING CO.

By P. R. HINES,

Its Local Agent at Portland, Oregon, the Office of
Said Agent Being Located at Lewis Building,
Portland, Oregon.

T. J. GEISLER,

Solicitor and of Counsel for Plaintiff.

Here follows verification.

(Title.)

PLAINTIFF'S CONDENSED STATEMENT OF
THE INTERROGATORIES AND AN-
SWERS THERETO FILED BY THE PAR-
TIES IN THIS CAUSE.

Both parties filed interrogatories under Equity Rule 58, which with respect to those pertinent to this cause and the answers thereto were as follows on behalf of defendant:

1. State what claim or claims of the patent in suit will be relied upon at the trial as infringed.

A. Claim No. 12.

2. State what date of completion of invention plaintiff will rely upon. A. According to letter from C. E. Cleveland, date of completion of invention as expressed by claim No. 12 was in the fall of 1908.

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3. State whether or not a device as shown in the drawings of the patent was ever constructed and completed prior to the date of filing of the application which resulted in the patent in suit, and if so, give the date of completion of the device. A. A turner as described in claim No. 12 was completed early in January, 1909.

4. State whether similar devices, but of a different construction from that defined in such claim was ever, to plaintiff's knowledge, made or used, or by it caused to be made or used, more than two years prior to the filing of the application which resulted in the patent used on, and, if a device or devices have been made, illustrate and describe fully such device or devices, and give the date or dates of completion of such device, or devices. A. There were many devices of a construction different from that defined in said claim. These devices, however, were not entirely satisfactory, and that was the reason for the patentee's invention. These prior devices are shown by patent to Simonson cited in the defendant's answer. I have no knowledge as to when said devices were completed, outside of information given in said patents.

5. State where the device is located upon which plaintiff will rely in its proof of infringement, and whether or not such device can be inspected on behalf of defendants. A. A device infringing said patent is located at Silverton, Oregon, defendant has admitted such fact, in answer to interrogatories allowed in behalf of the plaintiff.

6. If the machine referred to in interrogatory

5 cannot be inspected on behalf of defendants, describe and illustrate the device sufficiently for all parts thereof to be understood. A. This is covered by answer to interrogatory No. 5.

11. State when a drawing or model embodying said invention was first made. A. The first drawings were made about December 1, 1907, and completed on November 11, 1908, November 3, 1908, October 30, 1908, and October 21, 1908, October 20, 1908, October 23, 1908, and October 26, 1908.

12. State when the patentee first disclosed his alleged invention to others. A. 1907.

13. State when the first apparatus was completed prior to the filing of the application which resulted in the patent in suit. A. About January 1, 1909.

14. State date of invention that will be relied on by the plaintiff at the trial. A. Before December 1, 1907.

15. State the date of reduction to practice of the invention that will be relied on by the complainant at the trial. A. The first log turner, embodying the features covered by Claim No. 12, were completed before January 11, 1909.

16. State whether or not a device as shown in the drawings of the patent in suit was ever constructed, and, if so, give the date of the last construction. A. Yes, the last turner made by the plaintiff was shipped January 2, 1922. The last log turner made by licensee was shipped on Nov. 27, 1922.

17. If answer to interrogatory 3 is in the affirma-

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tive state whether or not said device can be inspected on behalf of defendants. A. Turners as shown on the patent drawings were sold to the Standard Box & Lumber Co., Portland, Oregon, National Box & Lumber Co., Hoquiam, Washington, and the McCormic Lumber Company, McCormic, Washington, and presumably can be inspected.

18. If answer to interrogatory 16 is in the affirmative, state whether or not said device can be inspected on behalf of defendants. A. No log turners have been made by plaintiff during ownership of the patent, except for export. Upon information and belief, log turners made by licensees have been sold recently to the Willapa Lumber Company at Raymond, Washington; the Defiance Lumber Company at Tacoma, Washington, and the Pacific-National Lumber Company, at Tacoma, Washington.

16a. State whether the subject matter illustrated in the accompanying photographic print marked Defendant's Interrogatory—Exhibit "B" is or is not a substantial representation of the "usual crooked bed-plates now in use" which are referred to in the words last quoted in line 128, page 2 of the specification of the patent in suit. A. It is.

17a. State whether said exhibit is or is not a substantial illustration of what is known as the Simonson Log Turner. A. This exhibit does illustrate the log turner referred to.

18a. State whether the log turner shown in Defendants' Interrogatory—Exhibit "A" was or was not known to be of public knowledge or use in the

United States before April 13, 1907. A. Yes, according to plaintiff's information, but plaintiff has no definite knowledge.

19a. State whether in respect to log turners substantially as shown in Defendants' Interrogatory—Exhibit "A" infringement of the patent in suit is or is not alleged against defendants or either of them. A. No. In respect to log turners substantially as shown in Defendants' Interrogatory—Exhibit "A," infringement of the patent in suit is not alleged.

Interrogatories on behalf of plaintiff:

1. Specify as to each of the patents cited in paragraph XIV of the answer herein, the particular mechanical feature or combination of parts described therein, on which the defendants will rely on the trial of this case as instances of prior publication of the patented invention here in suit. A. None of the patents designated in said interrogatory are relied upon to show an exact duplication of the construction shown in the patent in suit, but all show, collectively, that prior state of the art upon which said patent was predicated, and show it to anticipate any invention exhibited in the subject matter of Claim 12 of said patent—the sole claim relied upon by plaintiff.

7. State, if you know, whether the log turner referred to in paragraph XV of the answer herein as made by the Hamilton Machinery Company of Peterboro, Ontario, Canada, in the year 1905 is still in use; also state, if this machine is still in use, where the same may now be inspected on behalf of

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plaintiff; if said machine cannot be inspected on behalf of plaintiff describe and illustrate by drawings those parts of this log turner and on which the defendants will rely upon at the trial of this cause as embodying the patented invention here in suit. A. The log turner referred to in Interrogatory No. 7, is still in use at Port Moody, British Columbia, in the mill of the Canadian Pacific Lumber Co. at that place.

9. Referring to Fig. 3 of the drawings forming part of the Cleveland patent here in suit; was there at the date of the commencement of this suit, used in the plant of the defendant Silverton Lumber Company, log handling mechanism having a straight bed-plate like that marked 4 in said figure? A. Yes.

10. If so, did said bed-plate have a bearing like that marked 8 in said figure? A. Yes.

11. If so, did a shaft pass through said bearing like the shaft 7 of said figure? A. Yes.

12. If so, did said log handling mechanism also embody a cylinder and piston like 38 in said figure? A. Yes.

13. If so, did the mechanism embody an arm connected to said piston like the arm 39 in said figure? A. Yes.

14. If so, did said arm terminate in a bifurcation straddling said bearing on the bed-plate in similar manner as in said figure? A. Yes.

15. Was said log handling mechanism installed in the plant of the Silverton Lumber Company furnished directly or indirectly by the defendant Sum-

ner Iron Works? A. It was furnished directly by defendant, Sumner Iron Works.

Dated March 13, 1924.

Defendant's Interrogatories Exhibits "A" and "B" to be reproduced photographically and to be made a part of the record.

(Title.)

ANSWER.

To the Honorable the Judges of the District Court of the United States, in and for the District of Oregon:

The answer of the two defendants, Sumner Iron Works, a corporation, and Silverton Lumber Co., to the bill of complaint herein.

Said defendants now and at all times, saving and reserving each unto itself all benefits and advantage of exception which can or may be had or taken to the errors or uncertainties or other imperfections in said bill of complaint contained, for answer thereto or unto so much of such parts thereof as said defendants are advised is or are material for them and each of them to answer unto, each for itself answering says as follows:

I.

As to paragraph numbered I of the bill of complaint, being without knowledge except by said bill of complaint, each of the defendants denies that plaintiff is a corporation; denies that it is duly organized under the laws of the State of Wisconsin

or otherwise; and denies that it has its principal office at Wausau, Wisconsin.

II.

Defendants admit that Sumner Iron Works is a corporation, as alleged in paragraph II of the bill of complaint herein.

III.

Defendants admit that Silverton Lumber Co. is a corporation as alleged in paragraph III of the bill of complaint herein.

IV.

Defendants deny the existence of any right of action or of recovery as is suggested but not alleged in paragraph IV of the bill of complaint herein.

V.

Answering paragraph V of the bill of complaint, the defendants deny, upon information and belief, that prior to April 13, 1909, or at any time, Charles E. Cleveland was the original, first and sole inventor of a certain new and useful improvement in log handling mechanism, not known or used by others in this country before his invention or discovery thereof, and not patented or described in any printed publication in this or any foreign country before his invention or discovery thereof, or more *more* than two years prior to his application for patent therefore hereinafter recited; deny that said invention was not in public use or on sale in this country for more than two years prior to his, the said Cleveland's, application for patent therefor as in the bill of complaint herein recited; and

deny that no application for a foreign patent for said invention was filed more than twelve months prior to the filing of the application for the hereinafter recited patent in this country.

VI.

As to paragraph VI of the bill of complaint, being without knowledge, except by said bill of complaint, the defendants deny that on said April 13, 1909, said Charles E. Cleveland made due application for letters patent of the United States of America, which application was filed on the last-mentioned day under serial No. 489,675, and on due proceedings by the said Charles E. Cleveland and the full compliance by him with all requirements of the law thereafter, viz., on September 7, 1909, letters patent of the United States, No. 933,231, were duly granted to the said Charles E. Cleveland by the Commissioner of Patents of the United States; deny that there was thereby vested in the said Charles E. Cleveland, his legal representatives and assigns, for the term of seventeen years thereafter, the exclusive right to make, use and vend the said patented improvement in log handling mechanism "thruout" the United States and the territories thereof; and deny the allegation contained in the bill of complaint herein "that the said letters patent at all times hereinafter mentioned, were and still are in full force and effect, and the said original letters patent are ready to be produced in court in this cause."

VII.

Being without knowledge, except by said bill of

complaint, the defendants deny the allegations of paragraph VII of said bill of complaint, to wit, that thereafter and prior to the infringement alleged of the said letters patent, or at any time, the said letters patent were, for value received by the said Charles E. Cleveland, duly sold, assigned and transferred unto the above-named plaintiff; and deny that the plaintiff prior to and during the said acts of infringement complained of as committed on the part of the defendants, was, and still is the exclusive owner of said letters patent of the improvement therein described, including all claims for damages and profits for the infringement thereof.

VIII.

As to paragraph VIII of the bill of complaint, the defendants deny that the said Charles E. Cleveland, prior to the said assignment of said letters patent to the plaintiff, and the plaintiff ever since such assignment, have extensively engaged in the manufacture and sale of log handling mechanism embodying said patented invention; deny that they or either of them duly marked and caused all its log handling mechanism involving said patented invention to be duly marked with the notice required by law as to the same being patented; deny that the fact of said improvements being patented is also well known to the trade in general and to each of the defendants, or to either of them; deny that the said Charles E. Cleveland, prior to said assignment, and the plaintiff since said assignment of said letters patent to it, has invested large sums

of money in connection with the manufacture and sale of log handling mechanism involving said patented improvement, and in advertising and introducing said patented improvement to the trade of the general public.

The defendants deny that said patented improvement in log handling mechanism has become widely and favorably known to the public and particularly to persons engaged in operating saw and lumber mills, said improvement being recognized by the public and the trade as being of great practical benefit and utility; deny that the said Charles E. Cleveland prior to said assignment and the plaintiff since then, has manufactured and sold large numbers of said patented improvement in log handling mechanism by reason of the public generally acknowledging and acquiescing in the exclusive rights of said letters patent; and deny that plaintiff would have continued to do large business and make substantial profits from its said exclusive rights under said letters patent and would still continue to do so, but for the infringement of said letters patent by the defendants in said bill of complaint complained of.

IX.

The defendants deny the first allegation of paragraph IX of the bill of complaint, to wit, that the defendants and each of them well knowing the premises, but in violation of the exclusive rights of the plaintiff in said letters patent, within six years prior to the commencement of this suit, have each of them knowingly and continuingly, infringed

said letters patent. Said defendant, Sumner Iron Works, denies the act charged against it severally in said paragraph IX, namely, manufacturing and selling log handling mechanism embodying said patented improvement to many mills in utter disregard of the plaintiff's exclusive rights under said letters patent, including the mill of the defendant Silverton Lumber Co. or otherwise. The defendants, each for itself, deny that it confederated, the one with the other, or with anyone, to use, or that it has used, the alleged patented improvement in manner and form set forth in the bill of complaint herein or in any other wise. The defendants deny that plaintiff has been and still is, and will be as long as said infringement continues, deprived of the just rewards and profits which it otherwise would make under said letters patent; deny that plaintiff is greatly and irreparably, or in anywise, or in any degree whatsoever, damaged and injured in respect to any cause of action in said bill of complaint set out; and each defendant denies that it has made any profits which belong to the plaintiff as alleged in the bill of complaint, or otherwise.

The defendant, Silverton Lumber Co. admits that it owns and operates a Mill at Silverton, Oregon, and that in said mill it uses log handling mechanism manufactured and supplied by the defendant Sumner Iron Works, as the defendant last named also admits; but both defendants, each for itself, deny that said use or manufacture in any wise infringes upon any valid and exclusive right secured to the

plaintiff in the letters patent described in the bill of complaint herein, or otherwise.

X.

Defendants deny that plaintiff is entitled to any remedy for any injury or damage done by them or either of them to plaintiff as alleged in the bill of complaint herein or otherwise; and deny that plaintiff is entitled to any restraining order or writ of injunction, either temporary or permanent, by reason of any cause of action set out in the bill of complaint or otherwise.

XI.

The defendants, each for itself, deny that acts, or any of them, complained of in the bill of complaint herein, are in defiance of the or any rights acquired by or secured to plaintiff, as aforesaid, or otherwise, or to plaintiff's great or irreparable or any loss or injury or by which or otherwise plaintiff has been or is being deprived of great or any gains, profits or royalties which he might or otherwise would have obtained for the alleged unlawful action of said defendant, or that plaintiff has been occasioned large or any damages because of such or any alleged wrongful act of the defendant complained of or at all.

XII.

Each defendant declares that it is informed and believes it to be true and therefore alleges that the description of the alleged invention, as set forth in the specification annexed to said letters patent sued on, is incomplete, ambiguous, uncertain and indefinite, and that the said specification does not de-

scribe the said alleged patented invention in such full, clear and exact terms as to enable any person skilled in the art of science to which it appertains to make and use the same, and that the claims of said patent are uncertain and indefinite and do not correspond to the description in the specification.

XIII.

Defendants deny that the said invention so patented to the said Charles E. Cleveland is of great or any utility or value, and are informed and so believe and therefore allege, that the same has never been introduced into public use, and that the public generally, or any portion thereof, have never acquiesced in nor acknowledged the plaintiff's exclusive rights, or any right to the same or any portion thereof.

XIV.

Defendants are informed and believe and therefore allege that the said Charles E. Cleveland was not the original or first inventor or discoverer of the invention purporting to be covered by the said letters patent, or of any material or substantial parts thereof, and that the same, or material or substantial parts thereof had been described and illustrated in printed publications and patents prior to the date of the supposed invention of the said Charles E. Cleveland, and more than two years prior to his application for letters patent.

Defendants specify instances of such prior publication as follows, to wit:

UNITED STATES LETTERS PATENT.

- No. 48,658, issued July 11, 1865, to Isaac H. Collier.
- No. 121,355, issued Nov. 28, 1871, to Thomas W. Goodwin.
- No. 134,117, issued Dec. 17, 1872, to S. Wheeler.
- No. 309,103, issued Dec. 9, 1884, to F. F. Schofield.
- No. 382,760, issued May 15, 1888, to J. B. Erwin.
- No. 408,760, issued Aug. 13, 1889, to F. Simonson.
- No. 448,588, issued Mar. 17, 1891, to Flavel Simonson.
- No. 448,590, issued Mar. 17, 1891, to Flavel Simonson.
- No. 448,591, issued Mar. 17, 1891, to Flavel Simonson.
- No. 448,592, issued Mar. 17, 1891, to Flavel Simonson.
- No. 448,593, issued Mar. 17, 1891, to F. Simonson.
- No. 483,014, issued Sept. 20, 1892, to J. W. Powers.
- No. 531,861, issued Jany. 1, 1895, to C. M. Rhodes.
- No. 559,192, issued April 28, 1896, to P. McNerney.
- No. 623,002, issued April 11, 1899, to Edward E. Fitzgerald.
- No. 694,459, issued March 4, 1902, to J. R. Carter.
- No. 759,857, issued May 17, 1904, to B. Botkowski.
- No. 852,231, issued April 30, 1907, to D. A. Kennedy.
- No. 875,297, issued Dec. 31, 1907, to G. W. Stanley.
- No. 905,721, issued Dec. 1, 1908, to J. F. Lindberg & J. Fitzgerald.
- No. 992,212, issued May 16, 1911, to W. H. Kratsch. and other prior patents and publications which

these defendants crave leave to produce at any hearing of this case, upon proper notice and supplemental pleadings, as soon as they are more fully informed in the premises.

XV.

Defendants are informed and believe and therefore aver that all of the features, principles and elements of the alleged improvements or discoveries of the said Charles E. Cleveland were manufactured and used by various persons unknown to defendants long prior to complainant's alleged invention or discovery thereof and were in public use and on sale in the United States for more than two years prior to his application for patent, and defendant asks the privilege of inserting the names of such persons upon discovery thereof, some of said persons being as follows:

The Eastern & Western Lumber Company, located in Portland, Oregon, have now in use such a machine as is above described, and which was installed, and in use by the predecessors of said Company at and before the date hereinbefore in this paragraph set forth.

A log turner, in all substantial and material respects with that of the said Charles E. Cleveland in suit, was made by the Hamilton Machinery Company of Peterboro, Ontario, Canada, in the year 1905; it was delivered to and installed by the Fraser Mills at Port Moody, Canada, not later than 1906; and in consequence, its design and manner of construction had become a matter of common knowledge in the United States for more than two years.

prior to April 13, 1909, which is alleged to be the date on which the application for patent was filed by said Charles E. Cleveland.

XVI.

Defendants are so informed and believe and therefore allege that the said Charles E. Cleveland was not the original or first inventor or discoverer of the invention purporting to be covered by the said letters patent, or of any material or substantial parts thereof, and that the same, or material parts thereof, had been in public use or on sale in this country prior to said alleged invention, and for more than two years before the application for said letters patent.

XVII.

Defendants allege that the letters patent sued upon are, in all respects material to this cause, invalid for want of patentable invention.

WHEREFORE, these defendants, having fully answered to the said bill of complaint in so far as they are advised the same is material or necessary to be answered unto, deny that the said plaintiff is entitled to the relief or any part thereof in the said bill of complaint demanded, or any relief whatsoever, and pray to be hence dismissed with their reasonable charges in this behalf most wrongfully sustained, and such other relief as the Court may deem just and equitable.

ATKINS & ATKINS,

COOLEY, HORAN & MULVEHILL,

Attorneys for Defendants.

Here follows verification.

(Title.)

STIPULATION FOR USE AT THE TRIAL OF
THE CAUSE.

In the above-entitled cause counsel for the respective parties, hereby enter into the following stipulations, to wit:

1. That at the trial of this cause printed, photostat, or lithographed copies of all reference patents, domestic or foreign, furnished by the United States Patent Office, and pleaded or introduced to illustrate the prior art, to define the scope of the patent, shall be accepted in evidence without certification, when offered by either party, with the same force and effect as if they had been certified, subject only to proof of inaccuracy, if any, and to their competency and relevancy.

2. That at the trial it shall be accepted without proof, as an established fact, that machines substantially the same as that shown in Defendants' Interrogatories, Exhibit "A," were of public knowledge or use in the United States prior to April 13, 1907.

3. That a copy of the articles of the incorporation of plaintiff, duly certified under the hand and seal of the proper official of the state in which incorporated, shall be sufficient to establish the corporate and legal existence of plaintiff.

4. The original assignment of the patent sued on to plaintiff, or a copy of the record thereof duly certified by the United States Patent Office, shall

be sufficient proof of the execution, delivery and contents of said assignment.

Dated Nov. 7, 1923.

T. J. GEISLER,
Counsel for Plaintiff.
ATKINS & ATKINS,
Counsel for Defendants.

In the District Court of the United States for the
District of Oregon.

J. D. MURRAY MANUFACTURING COM-
PANY, a Corporation,

Plaintiff,

vs.

SUMNER IRON WORKS and SILVERTON
LUMBER COMPANY, Corporations,

Defendants.

STATEMENT OF EVIDENCE.

A Condensed Statement of All Parts of the Testi-
mony Given in this Cause Essential to this De-
cision of the Questions Presented by this Ap-
peal, on the Trial of this Case by the District
Court on January 3, 1924:

TESTIMONY OF P. R. HINES, FOR PLAIN- TIF.

P. R. HINES, a witness called on behalf of the
plaintiff, being duly sworn, testified on

Direct Examination.

I am a mining engineer. I am conversant with

(Testimony of P. R. Hines.)

the principles of mechanical construction. At the present time I am representing the D. J. Murray Manufacturing Company, who owns and controls the patents involved in this suit. I have represented them here in Portland for two years. I have read all through the patent here in suit. (The original patent was here offered and withdrawn by consent; a copy thereof already being in evidence as part of deposition of Mr. Cleveland.)

Witness then read claim 12 of the patent and pointed to the elements thereof in the patent drawings and in a model produced in court, namely:

“In a log handling mechanism the combination of a bed plate,” that is numbered on the drawings 3 and 4. “Provided at its outer end with a shaft bearing”; which is No. 8; “a shaft extending through said bearing” which is No. 7. “An arm in operative relation with the shaft, said arm”—either 39 or 41—“being bifurcated and straddling the bearing” which is No. 8 “formed upon the outer end of the bed plate; a power cylinder pivotally mounted upon the bed plate; and a piston rod working in the cylinder and connected at its outer end to the adjacent end of the arm.”

Q. Do you know of your own knowledge log turners which are made by defendant here with a similar mechanism as illustrated by this model?

A. I do. I saw in August, 1922, a log turner installed at the Silverton Lumber Company, which I know, of my own knowledge, was manufactured by the Sumner Iron Works; that, as far as my

(Testimony of P. R. Hines.)

experience as a mechanical engineer is concerned, is identical in construction. I also know of a similar log turner which I have examined at the Willamette Valley Lumber Company at Dallas, Oregon; also a recent installation at the Columbia River Paper Mills of Vancouver, Washington, all of which I personally verified, and have seen myself. The latter machine was delivered and installed sometime in August of this year. (1923.) In each of these devices the log turner had a straight bed-plate, that part designated in the model and patent as Nos. 3 and 4. Those devices built by the defendant also had the parts 3 and 4 in them, also bearings, like 8 and 9 at the end of the bed-plates, and the shaft passed through the bearings of the bed-plates. Those devices also embodied cylinders like 38 and 40 and piston rods like 38, the same as in this model. Those devices also had an arm like 39 and 41. The one at the Silvertown Lumber Company had arms in every essential the same, but in the one at the Columbia River Paper Mills, the push-arm differed slightly from the push-arm shown in the patent in that it was arranged for a nigger bar to come up through. A nigger bar is a part of the machine used to turn small logs, while this machine is usually used entirely on large logs. The machine at the Columbia River Paper Mills was arranged for the nigger bar to come up through the bearing which was split.

Cross-examination.

You have referred in your direct examination to

(Testimony of P. R. Hines.)

bed-plates 39 and 41 in reference to a claim calling for a single bed-plate, namely, claim 12. Please explain what you mean by referring to two bed-plates as being a part of the mechanism described in claim 12.

There are two bed-plates to a machine, but in describing this mechanism combination, we speak of the combination of this one bed-plate and the bearing at the end of this straight line bed-plate, and the forked arm straddling this one; straight line bed-plate, but of course each machine as built has two bed-plates with the construction duplicated. Bed-plate 3 is the bed-plate appropriate to cylinder 38, and bed-plate 4 is the one appropriate to cylinder 40. There is only one bed-plate in each combination. This model does not purport to be a working model, it is not arranged to be connected with steam, as the control pusher valves, etc., are not in question. It does purport to be a working model in so far as it shows the actual construction of the machine in those parts involved in our claims. The skid lifts are not shown because what they call the independent skid lift patents do not enter into this case. This model undertakes to show only those elements and combinations which are called for in claim 12. The mechanism which would be necessary for an operative model for holding the log while they are operating upon the log is not shown in the model. The holding mechanism, that is, the carriage, is not shown. That is separate. When I refer to carriage I mean the

(Testimony of T. B. Sumner.)

mechanism for holding the log while being operated on by the push-arms and the hook-arms.

Witness excused.

Model offered in evidence and marked Plaintiff's Exhibit 10. Articles of Incorporation of the Plaintiff Company offered and marked Plaintiff's Exhibit 11. Certified copy of assignment of the patent from the patentee Mr. Cleveland of the plaintiff offered in evidence and received in place of the original assignment, and marked Plaintiff's Exhibit 12.

Plaintiff rests.

Defendant introduced in evidence a copy of each patent set up in the answer. Same were received without objection and marked Defendant's Exhibits 1, 2, 3, 4, 5, 5½, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19 and 20.

TESTIMONY OF T. B. SUMNER, FOR DEFENDANTS.

T. B. SUMNER called as a witness by defendants, being duly sworn, testified on

Direct Examination.

My age is 68; residence, Everett, Washington. I am vice-president and general manager of the Sumner Iron Works Corporation, one of the defendants. My brother and I started the business when we were boys, and I have been connected actively with the business ever since; there were

(Testimony of T. B. Sumner.)

only two of us in the business, my brother and myself. The business was organized in Minnesota, forty years ago, possibly, a little longer. During the last forty years I have been actively engaged in this business. The Sumner Iron Works is engaged in building sawmill and shingle-mill machinery; engines and boilers; power plants. Nearly everything in connection with a sawmill or a shingle-mill. We have been located at Everett, Washington, thirty-one years last June. I am very familiar with the log turner furnished to the Silverton Lumber Company in this case, all of these machines, you might say, that are being built during the years that we have been building, for the reason that until—well, possibly during the war—my line has always been in the manufacturing end; had very little to do with the selling end until in the last two or three years more particularly. I am acquainted with the circumstances under which the machine referred to was built. Prior to 1913 or '14 we had been building log turners with a crooked bed, and I think it was in 1913 that we suffered a loss by fire; our complete plant was burned, patterns and everything else; from that time on, we changed quite a good many of our designs because we had to make new patterns for the whole line and possibly profiting by the experience that we had had, we made quite a good many changes in our line. I might say we are quite fortunately situated by being in a sawmill town like Everett for the reason that we can watch all of the different ma-

(Testimony of T. B. Sumner.)

chines, as it were, that we built, in operation. A great many times catching some things that were mistaken, and seeing that they were remedied when the next ones were built. The old turner, as it has been brought out, termed the Simonson turner, that is, the turner made by the Challoner people at Oshkosh, they had more or less trouble with the crooked bed. In fact, I think they had more breakages with the crooked bed than they had with the arms, and that naturally would turn a man's thought to a straight bed-plate, that is, trying and building a hook-arm or a push-arm with the greatest amount of strength to avoid as much breakage as possible. I might say that I think in the earlier days of the turners that the breakages on the shaft were very few; they occurred usually further up the arm and it has been a constant change all the time as it were, to try to strengthen the different parts to avoid breakages as much as possible. And when you turn to what they term a bifurcated arm, our attention naturally would go to that for the reason that we use it in so many places. If a patent would cover a bifurcated arm, I think it would be safe to say that to-day we would have to eliminate one-half—one-third to one-half—of our machinery, or change the design, for the reason that I can call to mind that very same principle back—must be nearly forty years ago—when my brother and I brought out a thresher machine, and the table that vibrated to separate the grain from the straw was driven by practically the same thing

(Testimony of T. B. Sumner.)

as that. It was not a rotating motion; it was a motion back and forth. That same thing was embodied in many places in the threshing machine. I am stating these things from memory. Had I known this was going to come up, I presume I could have brought some old photographs. Later on, my brother and I helped to design and bring out the first tractor threshing engine for the Minneapolis thresher people at Hopkins. I can call to mind our connection of the cross-head on the bifurcated arm. I can call to my mind a pump that was on the shaft that furnished water to the boiler, was driven by a bifurcated arm. I can go back years ago when we built bobsleds. Our line in Minnesota was more of agricultural machinery. We built bobsleds with oscillating runner; the same bifurcated principle was embodied in that. Take our shingle machines to-day, that we commenced building twenty years ago, the carriage is driven back and forth by a bifurcated arm. You can take our modern machines to-day and it is almost impossible to go and pick out any one of our machines to-day that you don't find the old principle of bifurcated arm, as it were, embodied in some part. Now, I have never seen anything of the turners as built by Geddings and Lewis at the time we were making our changes. I have seen some of their printed matter, but the straight bed came to my mind for the reason that—I think it was in 1906—I think it was in 1906—I was up to the Frazer mill figuring on a job. They were going to rebuild that whole mill, and the old turner, an old turner, I

(Testimony of T. B. Sumner.)

don't want this word Simonson to apply to that particular machine, but that type of machine; there was one of those old turners taken out of that old mill, and afterwards sold and went up to the Port Moody Mills; that was back in 1906 or '07; that had the straight bed; the beds had never broken; that naturally brought the straight beds to our attention. And then, while I would say that our arm, the push-arm and the hook-arm, resembles that a great deal, we made the same mistake there that we were trying to avoid in the crooked bed. That very same turner there has gone on, and you might say improved the old Simonson crooked bed; but what has it done? It has transferred that weak point to the arm; the point that is weakest in the whole machine. It is weak to-day. That is why we to-day have trouble with the arm, because the breakage is too great. I call to mind a part of the Cleveland deposition that said with divided bed the *change* for shrinkages and poor castings were greater, but he has transposed it from that to the arm, the part that should be the most substantial. So, as far as bifurcation is concerned, go back to the horse drawn wagon, it has bifurcated tugs; take the shafts, the thills, has bifurcated thills. I presume the old chariot would show bifurcation; something as old as mechanics; it seems to me, taking two old ideas and putting them into one, no invention there, no inventive genius demonstrated. Possibly I haven't answered your question.

Q. I think your statement is ample, as far as a

(Testimony of T. B. Sumner.)

general statement is concerned. You have said that you did not know the Cleveland machine at the time you adopted the design?

A. No, I wouldn't want to say that; I never had seen one of their turners, but I presume I had seen some of their literature. I wouldn't say that I hadn't, or I wouldn't say that I had, because that is taking too much from memory, but I never had seen anything of their turners. But, as far as the turners with the straight bed is concerned, the one I saw up there years ago was fresh in my mind when we were considering the redesigning of the turner after our fire, and our patterns had all been burned.

Q. When did you first become acquainted with the Cleveland patent in suit?

A. Why, I think that after we had the drawings made of the turners—and we must have seen the advertisement of the Cleveland machine—we sent the whole thing on to Siggers & Company in Washington who had been our patent attorneys for a great many years, to have a search made to see if there was an infringement, and they came back with their report and cited all the different—I don't know—many, many different patents that had been granted, and said that we would not infringe the Cleveland patent if we went on with the manufacture of that machine. We relied, I presume, a great deal on their judgment because they had made good with us all these years in patent matters.

(Testimony of T. B. Sumner.)

Q. When did you get an opinion upon the Cleveland patent in respect to making the machines which you afterwards made?

A. I wouldn't want to say without looking at our records. Our records, of course, correspondence and all with the Siggers Company, would give all of that, I am taking this all from memory; quite a good many years ago.

Witness now identified the report next referred to.

Mr. ATKINS.—I offer in evidence the report of Siggers and Company, patent attorneys to Sumner Iron Works, dated September 7, 1909.

Mr. GEISLER.—What is the object of the offer?

Mr. ATKINS.—For the purpose of examining the witness as to its contents.

Mr. GEISLER.—You propose to use the report as the testimony of an expert in this case?

Mr. ATKINS.—No.

Mr. GEISLER.—What is the object?

Mr. ATKINS.—To refresh the mind of the witness.

Mr. GEISLER.—I object to the introduction of the report for this reason: apparently it seems to be in the nature of an expert report by some attorney in Washington, which of course is clearly irregular under the rules. If they want to produce the expert they must bring him here; he must be present; if he wishes simply to refresh his memory, we have no objection.

(Testimony of T. B. Sumner.)

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(Testimony of T. B. Sumner.)

COURT.—You can file it as part of the record in the case. I don't think it is competent evidence.

Marked Defendant's Exhibit 21.

Q. Please state whether you wrote to E. G. Siggers for the report which has just been offered in evidence.

Mr. GEISLER.—I object to the form of the question; the Court expressly stated it was not evidence, merely filed.

COURT.—Tendered in evidence.

Q. Tendered in evidence.

A. I am under the impression that we have—I am under the impression that we have another report from Siggers and Company, long prior to this, and that we had them go more thoroughly into it, and I think this is what brought out this report. I am under that impression.

Q. Have you a copy of that first report you received? A. I presume we have that at Everett.

Q. But you haven't in your present possession?

A. No. I would say that I am just on my way back from California and I haven't gone over this matter at all. I am speaking this just from memory.

Q. State if you know the occasion for writing to Mr. Siggers for a second report, as I understand you have said you did.

A. We had been very careful not to, what would be termed, pirate on the trade, that is, steal some other manufacturer's ideas or designs. We claim that we build to-day the best and the most com-

(Testimony of T. B. Sumner.)

plete line of sawmill and shingle-mill machinery that is built in the world, more modern, and we have tried to build it up by our own efforts, and attention and opportunities in the past and have been very careful to not try and steal someone else's ideas, and I might say in forty years we have been in business, this is the first time we were ever in court on infringement of a patent. We have endeavored to keep away from that, and, well, play the game fair, you might say, in business.

Q. Did you receive any advices or notice from the plaintiff that you were infringing the Cleveland patent in suit?

A. Yes, I think we had a letter shortly—I would imagine shortly after the Murray people had purchased the patterns and drawings, and whatever it was from the Geddings & Lewis people, and saying that—calling to our attention that we were infringing, and I think we answered them back and cited the information that we had from Washington, and I would imagine that that was two or three or four years ago, sometime ago anyway; and I think that was the last that we ever heard from them until the action was commenced on this turner down here at—here in Oregon.

Q. Do you remember what reply, if any, you made to the first notice you had of an alleged infringement in this case?

A. I wouldn't want to take that from memory without seeing a copy of the letter, but I know

(Testimony of T. B. Sumner.)

that,—well, possibly I hadn't better say because it would be taking it too much from memory.

Q. In arriving at the construction of the log turner as you built it, and which is claimed to infringe the Cleveland patent, did you, or did you not, copy the Cleveland design?

A. Well, it is very similar to the Cleveland design; very similar for the reason that the design in the construction was old; we had been building it for years.

COURT.—What counsel wants to know is, whether you had before you at the time you manufactured, the Cleveland design and copied it?

A. No, we didn't; didn't have it.

Q. The knowledge of the Cleveland patent, then, came to you after you had designed your machine?

A. No. I wouldn't say that; I wouldn't say that. As I say, we might have seen some of their printed matter, but I never had seen one of their machines.

Q. At the time you made your design, did you know of the existence or the scope of Claim 12 of the Cleveland patent?

A. I never had seen a copy of the patent.

Q. Did you know that that particular feature was covered by the Cleveland patent?

A. No, sir; had not seen any copy of the patent at all. A great many times we see the printed matter on any particular machine, but don't go thoroughly into it to see whether it is covered by patent, and if so, what part.

(Testimony of T. B. Sumner.)

Q. I hand you a copy of the photograph, and ask you to state if you know what it represents?

A. Yes, that is the—as I understand it, that is the old machine that I saw up Frazier River about the date I mentioned. They took it out of that mill, and it was sold, and went up to a mill at Port Moody where this is now, and that was the same one taken out from the Frazier River Mills. That photograph correctly represents the log turner which I saw in 1906.

Q. Please explain what the details of the log turner as shown there are?

A. Why, this merely shows the principle of the straight bed and an old type of the push-arm. This shows the push-arm.

Q. Will you compare that with the model, plaintiff's model here, and indicate the parts that are shown here that correspond to the parts of the model. I may add, that the members of the model are numbered, and you may refer to them by number if you wish.

A. The only similarity would be the straight bed, that is, the straight bed here and this straight bed there. This has two bearings in the bed, and that has one. Referring to the photograph, Defendant's Interrogatory, Exhibit "A," that shows a straight bed-plate?

Q. What do you mean by straight bed-plate?

A. Why, without crooks and curves, and this shows a straight bed-plate, with two bearings instead of one, and a trifle wider on the shaft end than

(Testimony of T. B. Sumner.)

on the cylinder end, but running nearly parallel the two sides. This bed-plate carries the cylinder, with trunnions on each side of the cylinder or in the receptacle of the bed-plate on each side, held down by a cap. The front end of the bed-plate also carries the shaft. The shaft would be parallel with the center of the trunnion on the cylinder. The purpose of the cylinder and shaft in this machine was to avoid the breakage.

Q. I am speaking of the cylinder and shaft; what was the relationship between the cylinder and shaft? A. I don't catch your meaning.

Q. The shaft carried an arm, did it?

A. Oh, yes, the shaft carried an arm.

Q. What was that arm called?

A. The arm was actuated by a piston rod working in the cylinder.

Q. With what effect upon the shaft?

A. Making the shaft rotate.

Q. By rotate do you mean rock? Was it a complete rotation or rocking motion?

A. Rocking motion.

Q. Was the operation of the log turner shown in this photograph substantially the same as, or different from, the log turner shown in plaintiff's exhibit model?

A. I would imagine that the distance from the center of the shaft to the center of the pin in the upper end would be about the same as the distance from the center of the pin in the upper end of the arm, to the end of the cylinder, would

(Testimony of T. B. Sumner.)

be governed a good deal by the length of the cylinder to provide for sufficient stroke; that would be practically—I imagine immaterial.

Q. But is it the same substantially in operation?

A. Substantially the same.

Q. Again referring to this photograph, please state whether the piston rod and the push-arm move in the same, or different, vertical planes?

A. I don't think it makes any difference.

Q. I am talking about this photograph here; does that move in the same vertical plane.

A. Oh, that is the same according to the length of stroke of the cylinder.

Q. That is the axis of the rod, and the axis of the arm—

A. Are practically the same.

Q. State whether there is any advantage in locating these two members and organizing them so as to work in the same vertical plane, as compared, for example, with the sketch shown in Mr. Cleveland's deposition?

A. I don't *think could* be any particular difference in that. I don't see why there would be. You get a little more movement, of course, by the length of the arm and the length of the cylinder but that, I imagine, would be immaterial.

Q. I hand you the deposition in evidence of Charles E. Cleveland, and refer to the sketch on page 9 thereof, and will ask you to compare that sketch with the photograph you have in hand and state the difference, if there is any, between the two machines, shown there.

(Testimony of T. B. Sumner.)

A. Well, this is the old type bed; what we term the crooked bed; and this blue-print, photoprint here, shows a straight bed. And what they have done, is to sort of transpose the crooked bed to the straight bed, and the straight arm to the crooked arm, and transfer the breakage of the bed to the breaking of the arms. They have overcome the breaking of the bed by making this straight bed and have transferred, you might say, the breaking strain to the crooked arm; that is what this has done.

Q. Do you wish to be understood as stating that the photograph, Defendant's Interrogatory, Exhibit "A," differs from the sketch shown in the deposition of Charles E. Cleveland, page 9, only in respect to the different shape of the bed-plate?

A. Well, in this sketch—that shows the crooked bed, and the single box—bearing, you might say; this is old Simonson type with the crooked bed, and one bearing, and this photograph, photo blue-print, shows a straight bed and two bearings shown here on the shaft. The two bearings shown in Exhibit "A" are located upon the end of a straight bed-plate, as I understand it. These bearings carry the shaft. The arm is keyed to the shaft. The arm with respect to the shaft in this Exhibit "A" is located between the bearings. The purpose is to cause a rocking of the shaft by the operation of the piston rod upon the upper end of the arm.

Q. The longitudinal axis of the piston rod, and

(Testimony of T. B. Sumner.)

the longitudinal axis of the arm, the two lines are both in the same vertical plane, are they not?

A. The piston, and the piston rod in the cylinder, as they operate the arm, of course they naturally—this point here rises and falls, which is provided for by the trunnion on the cylinder, allowing the cylinder to oscillate, as it were, to keep the line of the piston rod, and the upper connection in the push-arm, or the hook-arm, perfectly in line. They are in the same direct line, the piston rod and the axis of the arm, up here. They vary, rise and fall, but always in direct line.

Q. And they work in the same vertical plane, don't they? A. I presume so.

Q. Is there any advantage in locating the connection between the shaft and the push-arm in line with the longitudinal axis of the piston rod?

A. Why, the upper end of the arm, either hook or push arm, would want to be direct in line with the center of the cylinder, so as the piston rod would move back and forth there wouldn't be any cramping or bending of the piston rod, so they would naturally be in line; that is, the upper end of the arm with the center line drawn through the center of the cylinder; that would be practically necessary connection.

Q. Now if the connection between the shaft and the push-arm shown in Exhibit "A" were divided, what would be the effect, if any, upon the operation of that machine?

A. Be none whatever. There would be no dif-

(Testimony of T. B. Sumner.)

ference in the operation of a push or hook arm this way; whatever way it might be connected at the bottom of the shaft, the movement would be exactly the same. The distance that it would travel through space, of course, would be governed by the length of cylinder and the stroke of the piston.

Q. What would be the effect on the strength of the push-arm by bifurcating it at the end which is connected to the shaft?

A. If this line here had been straight on each side for the same amount of metal, it would develop greater strength. We have found out, in the last two or three years experience here is where we are having breakages. We have dropped this type entirely; for this reason it was folly to try to get away with a crooked bed and transpose to crooked arm. Our arms are now made straight, like this, to do away with this type here, which has proven a detriment instead of an advantage. The turners we build now are not built with any such type as this.

Q. Do you mean to say, then, this bifurcated arm is stronger or not so strong as the straight arm shown in Exhibit "A"?

A. You change that. You let that run straight up there, and put it between the bearings the same as our turner to-day, and it is a stronger turner than that is.

Q. Is the bifurcated arm stronger or weaker than the straight arm?

A. The straight arm is the stronger, that is why we straighten the bed.

(Testimony of T. B. Sumner.)

Q. How do you arrive at that conclusion?

A. By the breakages that we get for repairs.

Q. You have found in actual practice that the straight arm is stronger than the bifurcated arm?

A. I might answer that by saying I just came from Samoa, California, where they have one of these turners. The master mechanic says, "Don't send us any more of this arm, that is straight up through, because this is the second or third one you have sent us."

Q. Then from actual experience in manufacturing, you know this?

A. I saw them down there last week.

Q. You find that this bifurcated arm is subject to breakage which the straight arm is not subject to?

A. As built there it is a mistake.

COURT.—You use the bifurcated arm, do you? Are using it now?

A. I may say that we are still building straight bed but with two boxes similar to this, and the arm is in between the two boxes similar to this, and the arm is in between the two boxes instead of straddled outside. This is done on turners we are now building to avoid this breakage.

Mr. SNOW.—That is to say, you are now building a straight arm and not a bifurcated arm.

COURT.—What I asked is whether you are building this kind or not—like that?

A. The bed is very similar to that.

COURT.—I don't mean bed, but arm.

A. The arm differs from that. May I show

(Testimony of T. B. Sumner.)

you a photograph of that, that possibly could catch it quicker. I don't know particularly bifurcated arm.

COURT.—Yes, if you have one, I will be glad to see it. I understood at the beginning of this trial there was no controversy but what the instrument or machine manufactured by the defendant company was substantially the same as complainant's patent. That is what I understood and the question in the case is whether there was any invention in complainant's patent in view of the prior art. Now I understand this witness is not using this.

Mr. ATKINS.—That is correct, your Honor, but they did build a machine that was substantially the same as this.

COURT.—Not building now.

Mr. ATKINS.—They are not building it now. That is the point, and the reason, as the witness has said, that they are not building it is that that type of machine is subject to breakage.

Mr. SNOW.—Just one question, Mr. Sumner, to clarify the record: You spoke of the bifurcated arm similar to that shown in plaintiff's model as breaking. At what point do these breaks usually occur in the arms? A. In the curves there.

Mr. SNOW.—In the shoulder of the bifurcation?

A. It is very seldom for an arm to break in the shaft. It is a small thing to hold the arm to the shaft, but the trouble is to get it strong further up where the breakage has occurred.

(Testimony of T. B. Sumner.)

Q. Can you detach that photograph?

A. I can have it taken out.

COURT.—Let me see, you have two bearings now on the shaft.

A. The bed carries two bearings; the shaft is in two bearings; but it is not on each side of one bearing.

Q. It doesn't straddle the single bearing?

A. It doesn't straddle a single bearing.

Q. This photograph, as I understand, represents the construction of the log turner that you are now making? A. Yes, sir.

Photograph offered in evidence and marked Defendant's Exhibit 22.

Mr. GEISLER.—I would like to ask what is claimed for this particular photograph? It is not to contradict the admission of infringement?

Mr. ATKINS.—It is to show the present construction of machine made by them and also to show some of many variations that can be made from the construction which is defined in Claim 12. There are already shown by testimony and exhibits on file certain variations, and this is one more added to them, as showing variety of operative construction that differ from the construction defined in Claim 12.

Mr. GEISLER.—This is variation from Claim 12 which you are now making?

Mr. ATKINS.—Yes.

Mr. GEISLER.—I don't think it is material but it will be before the Court.

(Testimony of T. B. Sumner.)

Q. Please state whether the construction shown in Defendant's Exhibit 22 had any effect on breakage of the push-arms or hook-arms in your machine, and if so, what effect?

A. I thought that what you wanted to bring out was one of the points made in deposition of Mr. Cleveland that the shape and construction of the arm as shown there was an improvement and something better and newer and that was why I referred to the points that made it weaker instead of stronger as brought out in the deposition of Mr. Cleveland. Now, this is a far stronger, more substantial arm, hook-arm and push-arm, because we have eliminated the curves, as I said, which we were trying to do in the bed. There is no new principal involved.

Q. But this is the arm, the push-arm, shown in Defendant's Exhibit 22, which you testified to be stronger? A. Yes, sir.

Q. Than the push-arm in plaintiff's patent?

A. Yes, that is why we have changed the bed, because we have had so many breakages, we adopted the construction shown in Exhibit 22 to overcome these objections.

Cross-examination.

I have seen a great many turners operated.

Q. Did you ever operate it yourself?

A. I have tried it. I am not an expert, though. I couldn't do as well as a sawyer.

Q. Have you any theory as to what causes the

(Testimony of T. B. Sumner.)

breakage of a push-arm or a hook-arm in the operation of a log turner?

A. I have a theory for everything I see in mechanics; whether they are right or wrong, that is neither here nor there.

Q. Did you ever see the patent granted to William M. Wilkins, December 27, 1904, for a log turner, No. 778,522?

A. No. I never knew Wilkins ever worked on that line.

Q. I call your attention to this patent and ask you to read the sentence beginning on line 76 to line 85 on page 1.

Mr. ATKINS.—Is this patent to be introduced in evidence? I don't want him to read a part of a document unless it is in evidence.

Mr. GEISLER.—Can all go in evidence if you like.

A. Where do you want me to commence? Where these red lines are? "The upper surface of the sides of the crowding bar, H, are rounded from the inside faces of the opening h' thereinto the lower edges of the wings h² thereon as illustrated in Figures 1, 2 and 3, so that when the crowding bar H is forced against a log moving longitudinally on the saw carriage B there is no surface on the crowding bar to catch on a knot or other obstruction on the log and thereby be forced sidewise and broken."

Mr. GEISLER.—I will offer the patent in evidence.

A. I didn't catch the drift of it; it might be a

(Testimony of T. B. Sumner.)

lowering device, board lowering device, as well as logging.

Mr. ATKINS.—If your Honor please, that patent which has been presented to the witness and which is offered in evidence, as far as I can detect, is wholly immaterial. I have no objection as it stands now, but it has been submitted to the witness and myself for the first time now.

A. That is all right.

Mr. ATKINS.—I reserve the right of objection.

A. I think I see the drift of it; let them put it in; I see the drift of it.

Marked Plaintiff's Exhibit 13.

Mr. GEISLER.—I would like your Honor to read the lines down here that are marked.

Q. You have noted that the patentee Wilkins in the specification in those lines to which I have just called your attention speaks of the fact that in his construction there it shows a sort of arrangement for pushing against the log. "There are no surfaces on the crowding bar to catch on the knot or other obstruction on the log and thereby be forced sidewise and broken." You remember that expression?

A. I wouldn't care to pass on that reading until I had consulted the drawings.

Mr. ATKINS.—I object on the ground that the witness has not inspected it and is not acquainted with it and ought not to be expected to pass on it without an opportunity for examination.

A. Never saw it before, never heard of it.

(Testimony of T. B. Sumner.)

Mr. GEISLER.—The object is, Mr. Atkins, I just want to ask the witness as to whether his theory as to the cause of the breaking of the arm agrees with with this patentee; he sets forth that it is due to the side thrust brought about by some protruding surface on the log hitting it and breaking it.

COURT.—Ask him that.

Q. Is it your idea that the breaking of an arm, be it push-arm or hook-arm, is caused by some protrusion on the log striking against the arm as the carriage moves by it?

A. What a question that is! What kind of a sawyer have you got if he is going to run his carriage and the arms of the Simonson out? Absolutely absurd!!

Q. You don't agree with the statement here of patentee Wilkins?

A. I wouldn't pass on that until I have been through the drawings; something I never saw before, never heard of.

Q. That isn't the question, Mr. Sumner. This patentee states it to be his opinion that the breakage—

A. What is the date of it? 1904—his opinion couldn't have been very valuable; never heard of it and got out in 1904.

Q. This patentee states it to be his opinion that the breakage of an arm is caused by the fact of there being some protrusion on the outside of the log which hits against the arm, gives the arm a side thrust and so breaks it.

(Testimony of T. B. Sumner.)

Mr. ATKINS.—It seems to me that this patent is wholly irrelevant; it expresses only the theory of a witness who is not present.

COURT.—Ask him what the facts are, if he knows; not what somebody else's theory is.

Mr. ATKINS.—That is the point I wish to make exactly.

Mr. GEISLER.—I just wish to ask, if the Court will permit it, whether he agrees or does not agree with this statement as to what causes the breakage of the arm.

A. I will discuss the operation of the Simonson turner with you in connection with skid lifts and carriage and all, if you will keep something away from me that I know nothing about. I don't know anything about this man Wilkins, whether he is an authority or whether it is some visionary thing. The patent office is flooded with—

COURT.—Never mind. How do you account for the breaking of the arms—what causes them to break?

A. There are many different causes.

Q. Isn't it a fact that the movement of the log past the arm, if there was any protrusion on the log, and the log is moved by the arm, while the arm is thrown forward, that such striking of the protrusion of the log on the arm would tend to break the arm?

A. In what operation? In putting off or rolling off?

(Testimony of T. B. Sumner.)

COURT.—Moving the carriage alongside the arm?

A. Why, the arms are supposed to be down out of the way when the carriage moves, absolutely; a man would be crazy who undertook to operate a carriage with the arms up like that.

COURT.—Before starting to move?

A. Absolutely. A man wouldn't hold his job fifteen minutes, a sawyer.

Q. Do you wish to tell the Court that the arms are never moved during the travel of the carriage?

A. Oftentimes they are up there, and their movements back—if you are a rapid sawyer enough to do so, oftentimes, but it isn't the practice. It would cause an arm to break in a different way, you would find the fracture this way on an arm, instead of crosswise.

Q. Take your Exhibit 22. When did you make that log turner?

A. Some time during this year it was brought out in the manufacture.

Q. Have you built such a log turner? A. Yes.

Q. When did you build it?

A. Why, I couldn't tell you the date. If a man would go to Tacoma you can see there one in operation, I think, in one of the mills there.

Q. When did you install it?

A. That I couldn't say.

Q. Did you only put it in this year?

A. It is manufactured this year.

Q. What part of this year, what month?

(Testimony of T. B. Sumner.)

A. I couldn't tell you without looking at our records.

Q. Have you any idea as to when?

A. No, I couldn't tell you.

Q. Has that log turner been operated, actually operated?

A. I haven't been there. I presume in operation. I don't know. I haven't been there since I was with the man who sold it.

Q. How do you know then that by that structure you overcome the breakage on the bifurcated arm?

A. By changing many types of the old ones that come in, old ones where we have had breakages; constantly taking out that curve.

Q. That is merely your theory?

A. They are in practice, and have not broken.

Q. That log turner has not been operated?

A. We have changed the type of that arm on old turners that we have had.

Q. Where have you put in substitutions for a forked arm, and put in a straight arm, as I understand it? Have you?

A. I thought I explained that to you, that we have been gradually taking this crook out and bringing this up straighter here, to do away with breaking.

Q. That would be a forked arm, would it not?

A. The bottom part has not been changed, the part that is on the shaft, that is, in repairing the old-timers.

Q. How did you come to build the log turner—for the Silverton Lumber Mills at Silverton, Oregon?

(Testimony of T. B. Sumner.)

A. One of our salesman sold a turner. The order came in and went through the shop in its regular course.

Q. Have you built recently a log turner for the Columbia River Paper Company at Vancouver, Washington?

A. Yes, we sold them a turner this summer. The construction of that log turner is very much like the model right there. Some little difference in the shape of the arms, or, if I call it to mind, it has a divided bed for the nigger, hasn't it, Hines?

Q. I show you here a photograph of a log turner, and will ask you whether that is not a photograph of the log turner installed by you at Vancouver, Washington?

A. Let me see the one of the other bed. I would imagine that—I would imagine that that would be that turner down there. I haven't got any reason to dispute it. It only shows one bed; whether the other one was a broad bed with two bearings—I would presume it to be the turner, I haven't any reason to dispute it. We sold them a turner, anyway.

Mr. GEISLER.—I offer these two photographs in evidence.

Marked Plaintiff's Exhibits 14 and 15.

COURT.—Do those show a bed-plate with one bearing?

A. Yes.

COURT.—Shows bed-plate with one bearing and

(Testimony of T. B. Sumner.)

push-arm bifurcated, and the bearings on either side of the bed-plate bearings. Is that right?

A. No, I think that is wrong.

COURT.—Isn't the bed-plate bearing in between the push-arms?

A. Yes, there is the bed-plate, and the bearing is in here, and this arm comes down bifurcated.

COURT.—The same as that?

A. Practically the same as that.

COURT.—Now, let me see 22. In this one, in 22, you put the bearings of the bed-plate on the outside of the push-arm bearings?

A. Yes.

Q. Now, look at Exhibit 15. That shows a hook-arm. A. Well, that shows a hook-arm.

Q. In that same construction at Vancouver, Washington?

A. Yes, but I thought the machine down there was a combination machine with wide bed and two bearings.

Q. This is a photograph of that hook-arm in that machine, is it not?

A. Hines, that isn't the combination bed.

Mr. HINES.—No, it isn't. I had in mind it was.

A. No, you are mistaken. This is all right.

Mr. HINES.—I think the skid lift positively identifies the machine.

Mr. ATKINS.—Counsel for plaintiff is requested to state whether he is proposing at this time to prove other alleged infringements than the one that

(Testimony of T. B. Sumner.)

is alleged to have been made by the Silverton Lumber Company?

Mr. GEISLER.—Incidentally, but that is not the entire purpose of this examination.

Mr. ATKINS.—The proof of other alleged infringement should be reserved for the accounting in the case, and that is the only reason I object to the question, not to delay the case at all, but he may have ulterior motives.

Q. Now, I ask you to look at the push-arm construction as shown in this photograph, Plaintiff's Exhibit 14, and state whether it is not a fact that that shows a bed-plate—straight bed-plate—with a bearing at the end of the bed-plate and push-arm astride of the bearings?

COURT.—That is what he said a moment ago.

A. Yes, but let me call your attention to just what I say; we are taking out a great deal of these crooks. This seems to be a later pattern, because a smaller turner, for you will see a great many of these crooks have been eliminated, which Mr. Cleveland claimed was one of his wonderful inventions.

Q. When was that order for Vancouver, Washington, taken?

A. You are not fair to me, when I told you I couldn't tell. I haven't any records here.

COURT.—Say you don't know, then.

A. No, I don't know.

Q. Do you know when it was installed?

A. I do not.

(Testimony of T. B. Sumner.)

Q. Is it not a fact that that particular construction was installed this year?

A. Yes, it was installed this year.

Q. And is it not a fact that it was installed this year as late as August? A. I don't know.

Q. Why was it, since you claim you had a different and better construction which affected the push-arm and the hook-arm, you nevertheless, as late as this year, followed the construction of the Cleveland patent here in question?

A. I think the drawings and the details and all for that ten-inch Simonson was gotten out about two years ago, and it is a great expense to go and get out a whole set of drawings, detailed specifications and all, and if I remember that, it was a rush job, and these drawings were taken into the pattern shop and the job was made that type, and I presume these drawings and specifications probably were made two years ago, maybe three years ago.

Q. Did the particular order here, which we are considering, I mean furnished by you, for a log turner for the Vancouver Company, require you to put in this particular type?

A. No, I think the order would read ten-inch log turner with certain sized shaft, certain length shaft, hook-arm, push-arm, and the requisite number of helper arms. That would be the way the order would naturally come into the shop. I have no knowledge or recollection of anything in connection with this particular order. It comes in and goes through its natural channels, and I would know of the sale, and

(Testimony of T. B. Sumner.)

I will see it go through the shop, but as for the details, I wouldn't know anything about them.

Q. Now, you don't wish the Court to understand that you got this order two years ago?

A. Oh, no.

Q. When did you get the order?

A. Sometime this year.

Q. After this suit had been brought?

A. I couldn't tell you. I wouldn't say without looking at our records. I don't know.

Q. Wasn't this suit commenced a year ago or more?

A. Might have been, I wouldn't say.

Q. Were you called upon to furnish this particular kind of log turner as shown by this photograph?

A. I answered that question before, that same identical question. We sold them a ten-inch log turner with a certain sized shaft, certain length of shaft, a hook-arm and a push-arm, and probably a certain number of helper arms, what that was I don't know.

Q. In furnishing this particular log turner for Vancouver, Washington, you intended to give them the very best that you knew of, as far as log turning outfit was concerned?

A. I presume that would be the argument of one of our salesmen.

Q. I understand you to have testified that you originally built log turners with crooked beds?

A. Yes.

(Testimony of T. B. Sumner.)

Q. When did you discontinue building log turners with a crooked bed?

A. I told you distinctly that when we had the fire and all of our patterns, the whole plant was wiped out—there were six acres of just debris—

COURT.—When was that?

A. I think 1913. If I remember right, the 15th day of April, 1913, taking it from memory.

Q. All of your patterns were destroyed at that time? A. Every piece.

Q. You had to build new patterns for your future work?

A. We had all of our tracings in the vault, and the office didn't burn, but the rest of the plant was wiped out entirely. All of the tracings of all of our drawings being in the vault were not damaged. Then from that we would take and make the changes when we put a big crew of pattern-makers back to work, to get back into the manufacture. And I might say that we burned out in 1913 and you take the history of our business for the last twenty years, and you can't pick out from the volume of business the year we burned out.

Q. When you changed to build your new patterns after the fire, then you made the change from the crooked bed to the straight bed?

A. I think that is my recollection.

Q. Why did you make that change?

A. To make it better.

Q. You testified that you saw a straight line bed up in Frazier River, Canada, at what time?

(Testimony of T. B. Sumner.)

A. I think it was 1906, taking it from memory, because I think the mill was rebuilt and started in 1908, and this was long prior to the rebuilding of the old Frazier River mill, just above New Westminster, and this turner was taken out from the old mill and resold, and went to Port Moody.

Q. What caused the long interval between 1906 and 1913, when you had that fire, as I understand, before you made the change from the crooked bed to the straight bed?

A. If you understand manufacturing at all, you will know that when you bring out a machine you start in and you make your drawings and you make all of your details and your specifications, you get your equipment, patterns, and everything else, all ready to manufacture. You have your flasks all made in the year that fit those particular drawings. It is a great expense to stop and abandon all of these patterns and jigs and drawings, and bring out something new.

Q. Can you state what year you put in the Silverton log turner? A. No.

Q. Was that before the fire?

A. Why no, it wouldn't be that turner. What a silly question! Would it be that turner before the fire, when I told you the pattern had burned, and I told you we built a crooked bed prior to the fire.

Q. Now, with reference to the fire, how long a time after the fire before you built and delivered the Silverton log turner? A. I don't know.

(Testimony of T. B. Sumner.)

Q. When you built that Silvertown log turner you had already seen advertising matter of the Cleveland patent here in suit?

A. I testified that I presumed I had seen the printed matter.

Q. And you knew the principles of construction there involved, didn't you?

A. I wouldn't answer that. I wouldn't say whether I had or not.

Q. You knew that it consisted of a straight bed, it had a straight bed; but you know the Cleveland patent had a straight bed?

A. I have answered that before. I said that I presumed that I had seen some of their printed matter, but I never had seen the Cleveland turner.

Q. Did the printed matter show that it had a straight bed?

A. Why, you have some of their printed matter. That would tell you whether it showed.

Q. Mr. Sumner, I am talking about the printed matter which you saw of the Cleveland patent.

A. I couldn't tell you all that, for the reason you are asking me to say things on the stand that happened back years ago. Now I told you I presume I had seen—

COURT.—If you don't remember, say so.

A. I don't remember.

Cross-examination interrupted for the purpose of further direct examination, and introducing some exhibits.

Mr. Sumner, in your direct examination yester-

(Testimony of T. B. Sumner.)

day you referred to the use by your company of bifurcated arms in the manufacture of different machinery, and that you had drawings of such machinery, or photographs. I now hand you three photographs, and will ask you to state what they are.

Mr. GEISLER.—I object to these, on the ground, as I understand, it is merely to show the prior construction of a forked arm, *per se*, which has nothing to do with this issue, because, as your Honor knows, in a combination claim it is assumed that the elements are old.

COURT.—It will be admitted for what it is worth.

Marked Defendant's Exhibit 23.

A. While this photograph number 265 shows a shingle-machine that we termed 1906—while that machine is designated as 1906, for the reason it was brought out and perfected prior to 1906, and as the machine had been advanced later on and improved, they took different numbers, and this is one of the first and the original, showing bifurcation of driving the carriage forward and back.

Q. This photograph that you have just referred to, shows the bifurcated arm, does it? A. Yes.

Q. Can you identify that by pencil mark?

A. Yes.

Q. The machine shows on this Exhibit 23, you said, was made prior to 1906?

A. Yes, that design. That machine there, I wouldn't say, was made in 1906, but that type, that

(Testimony of T. B. Sumner.)

number, that particular kind of machine, was made. Now, I don't know just when this photograph was taken. In going through, we have built, I think, nearly six thousand shingle-machines, and I couldn't identify. That represents a machine built by us prior to 1906. Photograph 760 shows bifurcated arms that connect to the different style of rachets that we have used off and on ever since 19— although brought out in 1904, applies to what we call 1906 and machines since.

(Introduced in evidence and marked Defendant's Exhibit 24.)

This photograph represents a swing trim, or trim with bifurcation on both ends. I think that design was brought out years and years ago. I couldn't identify just the year, but I would think along nineteen hundred two, three, four, five or six, somewheres along. I can swear it represents a machine built prior to 1906.

(Offered in evidence and marked Defendant's Exhibit 25.)

Q. I hand you an exhibit model, and ask you to state what it represents, you need not go into details of it, but does it, or does it not, represent the subject matter of Claim 12 of the Cleveland patent? A. Yes, I think it does very clearly.

(Offered in evidence and marked Defendant's Exhibit 25.)

Q. I hand you another exhibit model, and ask you to state what that is.

A. That is another log turner that resembles the

(Testimony of T. B. Sumner.)

old machine that I referred to yesterday, somewhat, pretty clearly, in design and principle, the straight bed-plate, and the single connection to the shaft, that I saw in Canada.

(Offered in evidence and marked Defendant's Exhibit 27.)

Q. Charles E. Cleveland, in his deposition, answering to cross-question 21, states: "I have seen the old Simonsen turner with the piston attached to a straight arm, with a solid boss in which the shaft passed through." Please state what you understand by that statement.

A. Why, that the arm, it has the—well, we would term that a hub, and when he refers to a boss, I would interpret that to mean the hub, and that is the extension on each side, or one side, or either side, as the case might be, which would be a boss. I can explain that.

Q. I hand you a model, and will ask you to state what it represents, if you know?

A. That is the arm. Now we would term that the hub, and if we were going to designate we would say with a boss on each side, with a distance through the eye, a given distance, whatever it might be, through the eye. That is the straight arm with a solid boss, as stated by Mr. Cleveland in his answer, it could be termed either a solid boss, or the hub, which ever way they wanted. It is a straight arm, with a boss.

(Offered in evidence and marked Defendant's Exhibit 28.)

(Testimony of T. B. Sumner.)

Cross-examination (Resumed).

Mr. Sumner, you testified yesterday that you saw this Frazier River construction, which is shown by that photograph Exhibit "A," in 1906, and in 1913 you had your fire? A. Yes.

Q. In that fire your patterns for your log turners were destroyed? A. Yes.

Q. You kept back reserved, I should say, the drawings from which the patterns had been made?

A. Yes.

Q. You had these drawings changed by your designers so as to eliminate breakage of arms, make them stronger; is that right?

A. We didn't have those drawings changed. We had a new set of drawings made, they didn't change the old drawings. We would have no record. These drawings differed from the drawings we previously had in the shape of the bed, and I presume in the shape of the arm. The old set of drawings showed the patterns which had been destroyed, they had a crooked bed. The new drawings had a straight bed. The log turner turned out from the new drawings made after the fire had a straight bed and a structure very similar to that shown in Mr. Cleveland's patent here. I have no recollection of these log turners in operation for the reason, as I said before, my duties have always been in the manufacture, in the plant end of it. My brother was the salesman and he was the one that visited the different mills.

(Testimony of T. B. Sumner.)

Q. When was the first time you saw the log turner built by the Cleveland patent?

A. To the best of my knowledge, as I remember it, the only time I have seen a log turner built along the lines of the Cleveland patent, was one that I was looking at down at Eureka, built and furnished by the Allis Manufacturing Company, who I understand are building under license with these people. I think that was—well, it was during this year. I couldn't, without referring to some of my notes, expense accounts or something like that, designate the date. Now this—just let me think a minute, I think our records show that the Allis people have furnished six log turners built under the license which they have from Murray, and I am almost positive that that turner at Doliber-Carson, in Eureka, is the only turner that I have ever seen, built like the Cleveland. Now, that is taking it just from memory. I have not personally studied the patents which were offered in evidence to show the prior art, the patents which you cited in your answer.

Q. Are you familiar with them?

A. Why, I don't know—I don't know how best to answer that, because the word familiar might cover a good deal of ground, but I know that I have read the patents over, and paid no further attention to them, because they would be passed up to our attorneys for their opinion. Mr. Horan here would be the one man who would study the patents.

(Testimony of T. B. Sumner.)

Q. Do you take the "Timberman"? Are you a subscriber to the "Timberman"?

A. Oh, yes. We have been a subscriber to that periodical quite a number of years, I imagine.

Q. As far back as 1912, if the paper was published in 1912?

A. Well, I presume that we have subscribed for it. We always considered George Cornwall on our list of friends, and I presume we would patronize him by taking his magazine.

Q. I show you here an illustration which was published in the "Timberman" of Portland, Oregon, in the issue of March, 1912, the illustration being identified by the heading "Cleveland's Improved Simonson Log Turner." Had you seen that before?

A. I don't know, I have no recollection whether I have ever seen it, or whether I have not. Have no recollection of it whatever.

Mr. GEISLER.—I would like to prove the publication of this. I can call the printer. Perhaps you have no objection to the introduction in evidence.

Mr. ATKINS.—No objection.

A. It couldn't have attracted very much attention in this country, because I never have heard of one being sold by Murray or Giddings & Lewis, outside of that mill of Brace & Hergerts, so it couldn't attract very wide attention; didn't catch the eye of the millmen, at least.

(Testimony of T. B. Sumner.)

Page offered in evidence and marked Plaintiff's Exhibit 16.

Q. Did you carry an advertisement in the same journal, the "Timberman," of Portland, Oregon, in August, 1921?

A. Why I presume that we carried an advertisement, that is all left to the advertising department, something I don't give any attention to particularly.

Q. I am asking about the picture here, particularly the illustration, the whole thing. Is not that your advertisement?

A. Yes, that brings out the skid lift invented and brought out for, to show the superior skid lift that we built, which Allis finally stole, and other manufacturers.

Mr. GEISLER.—I offer this in evidence. It shows the Cleveland patent embodied in the device which they at that time advertised.

Marked Plaintiff's Exhibit 17.

A. Just a minute. The Allis and other manufacturing companies bought this skid lift from us to attach to their other turners which they were building.

Q. I show you a page taken from the "West Coast Lumberman," a periodical which I understand is published at Seattle, Washington. Do you know such a periodical?

A. Yes, we class that as among our friends. I presume we carry an advertisement at all times. This is our advertisement in the periodical issued by

(Testimony of Edwin E. Thomas.)

the "West Coast Lumberman," September, 1921. It brings out the skid lift. If you notice, the printed matter all refers to the skid lift, which we claim one of our superior machines.

Marked Plaintiff's Exhibit 18.

TESTIMONY OF EDWIN E. THOMAS, FOR
DEFENDANT.

EDWIN E. THOMAS, a witness called by the defendant, being first duly sworn testified on

Direct Examination.

Please state your name, age, residence and occupation.

My age is 68. Residence, Portland; occupation, designer and builder of machinery. I have had rather a wide practical experience in designing and building machinery, several full lines of sawmill machinery, practically full lines for about thirty-five years. I am familiar with the designing and building of log handling machinery, including log turners. During the time mentioned I built several different machines. To quite an extent I am familiar with patents, and construing the same. I have taken out over fifty patents myself. I am acquainted with the type of log turner known as the Simonson log turner by observation, to quite an extent. I have read the five patents, which have been introduced in evidence and are marked respectively Defendant's Exhibits 6, 7, 8, 9, and 10. I have seen them all, read them. That is, read the notices of

(Testimony of Edwin E. Thomas.)

them that appeared in the "Gazette" at the time they were issued; as I look at them now, they are familiar to me, and I have had occasion to refer to some of them since. They are the patents taken out by Flavel Simonson on his so-called Simonson log turner. They constitute the development of the Simonson turner as far as he developed it. Referring separately to Defendant's Exhibit 9, figure 1 of the drawings of that patent, the member E indicates apparently the push-arm which is attached to the shaft.

Q. Describe the push-arm as you find it there.

A. It is an arm that is attached to the shaft.

COURT.—One or two pieces.

A. One piece. It is cast in one piece; here coming around, having two hubs, and joins to the shaft—no, there is no bearing between that. It is arm attached to the shaft in about the usual manner that the Simonson arm is now made, apparently, as shown there. It is evidently a bifurcated arm. It is so shown in Figure 2 of the drawing in that patent.

COURT.—What is this?

A. That is a hook that is shown in the other view; it is this hook here folded back between the arms. When it is in the lowered position this hook lay between the arms, as shown in this view.

COURT.—What does "e" represent?

A. I am trying to find out by looking at the other views.

Mr. GEISLER.—Pardon me for interrupting,

(Testimony of Edwin E. Thomas.)

but I have had a draftsman make a large drawing of that arm e, and if it will facilitate the examination, it is an exact copy of it.

COURT.—Does that represent this arm in one piece or in two, two arms? It looks as if it might be one on each side.

Mr. GEISLER.—Two arms.

Mr. ATKINS.—My claim is stated by reference to that patent that it consists of two arms “e,” with spacing block bolted to them; the question whether cast in one piece, or whether made integral by bolted construction, or otherwise, we rely upon that as a bifurcated form.

COURT.—You concede there were two arms attached.

A. By a spacing block to which the arms are bolted.

COURT.—I understand the witness to say cast in one piece.

A. That is the reason I was in doubt. Pretty hard to say just how made by the patent drawing. They are made that way now, and I presume are intended to be shown that way in the drawing. This drawing purporting to be of the arm E, shown in the Simonson patent, Defendant's Exhibit 9, is apparently a correct representation of the arm E of the patent. (Referring to enlarged drawings furnished by plaintiff.) I find a showing of an arm bolted together, which is in effect just the same as if it were cast together, for all intents and purposes, to use. It is one, in fact these three parts

(Testimony of Edwin E. Thomas.)

are one for use. It is a bifurcated form, and it carries in operative relation the shaft C shown in this drawing.

The drawing marked Defendant's Exhibit 29.

COURT.—When was the patent Exhibit 9, issued?

Mr. GEISLER.—The date of that patent is March 17, 1891, and it is numbered 448,592.

Q. Again referring to Defendant's Exhibit 9, please state how the cylinder I' and the rod K' are shown as connected with the arm E'.

A. Well, the cylinder being pivoted at the point shown is connected to this arm by the piston rod and the arms of course are attached to the shaft as shown.

Q. Are they mounted on the bed-plate?

A. No, they are not mounted, only on the stand here. No bed-plate at all. Just a stand there. I would call that a stand or bracket.

Q. I am talking about these parts. Are they mounted on bed-plate or not?

A. They are mounted on the floor here; you can call that a bed-plate if you want to.

Q. Would the floor be in effect a bed-plate there?

A. In effect, yes. If it were strong enough to take care of them it would be a bed-plate.

COURT.—What is the purpose of the bed-plate in this patent? A. To hold the parts together.

COURT.—That is all the purpose?

A. That is all; to carry them, to hold them together.

(Testimony of Edwin E. Thomas.)

COURT.—It performs no function in the operation of the machinery?

A. No. It may be designed different ways and will work just as well if properly designed.

Q. The floor marked A in Exhibit 9, is this in your opinion the same as a bed-plate?

A. Why that is the only bed-plate that is shown here, the bracket which carries the shaft directly rests upon the floor, apparently, and that would leave the floor as the only bed-plate shown.

Q. State whether in your opinion that floor A is the full equivalent of a bed-plate.

A. No, I don't think it would be the full equivalent of a bed-plate now in use. Because it would lack the necessary strength. If made of wood, for one thing, it wouldn't have the requisite strength to carry the machine. If the floor were made strong enough it would be equivalent to a bed-plate, if the floor were made of iron, for instance, it would be all right.

Q. I now show you a copy of the Cleveland patent in suit, and ask you to state if you are acquainted with the same?

A. Why, I am only acquainted with it by reading it, that is all.

Q. You are acquainted with Claim 12 of this patent?

A. I have read it. I understand what is meant by the claim, from reading it. This Exhibit 26 represents the subject matter defined by Claim 12 of the Cleveland patent.

(Testimony of Edwin E. Thomas.)

Q. Please compare Defendant's Exhibit 26 with Defendant's Exhibit 27, and state in what particular, or particulars, they differ one from the other.

A. Why the Cleveland model has an arm on both sides of the main bearing on the bed-plate, whereas the other one has an arm between the two bearings on the bed-plate. That is the main difference. Either is capable of doing the work, just as well as the other, if properly designed and proportioned. The difference that distinguishes them is the arm being bifurcated and attached to shaft on both sides of the bearing on the bed-plate, and this one having a bearing on the bed-plate on each side of a single arm—having a bearing on each side of the arm. Exhibit 27 shows a bifurcated bed-plate with a single arm connected to a shaft between the bearings, and Exhibit 26 shows a single bearing and the bifurcation of the arm straddling that bearing. I would prefer this structure if properly designed and had a bearing on the shaft and a bearing on each side arm—two bearings on the bed-plate instead of one bearing on the bed-plate. I prefer the type of this Exhibit 27, of construction, rather than that, for my part. When I say I prefer, I mean I think Exhibit 27 shows much stronger construction if properly designed.

Q. I now show you this Exhibit 28, and ask you to state if you know what that represents?

A. I should say that represents the arm on Exhibit 27, with a boss extending on each side, making a long hub to extend between the two bearings on

(Testimony of Edwin E. Thomas.)

the shaft—on the bed-plate. If this arm, Defendant's Exhibit 28, were introduced into Defendant's Exhibit 27, in place of the arm there shown, the structure would be stronger, because the shaft has two bearings on each side of this arm, and it has a hub which would be approximately as long as this would be, outside of the one on Exhibit 26.

Q. Comparing the arm, Defendant's Exhibit 28, with the arm shown in Defendant's Exhibit 26, what would you say as to the comparative strength of the two arms?

A. Why I should say there was not very much to choose with the arm alone, but when it is assembled into the machine with long enough hub to give it the same strength that the arm has on Exhibit 26, and that hub having a bearing on each side—having two bearings on the plate, one each side of the longer hub, I should say this construction was stronger. I think the whole structure in this Defendant's Exhibit 28 would be stronger than the arm shown in Defendant's Exhibit 26, if combined in such a structure as shown in Defendant's Exhibit 27.

Cross-examination.

Mr. Thomas, did you ever design a log turner?

A. Several different types of log turners.

COURT.—How long ago was the first one?

A. The first one in '93.

Q. 1893?

A. But not the Simonson type. You speak of log turner. I built one for Garland Company in

(Testimony of Edwin E. Thomas.)

Bay City, Michigan, in 1893 or 1894. That did not have a hook-arm, it was not the Simonson type. None but the Simonson type have hook-arms.

Q. Did you ever build a log turner of the Simonson type?

A. No, I never did,—yes, I may say I did, too; one running in the mill of the Spaulding Logging Company at Newberg, which has a hook-arm, but doesn't have a regular push-arm. You asked that question, if I built one with hook-arm? That has been running for fifteen or sixteen years. About fifteen years ago that was built. Not inside of sixteen years. It didn't have a push-arm; and was different construction from the Simonson. I have never built a log turner which embodies all the features of the so-called Simonson type. My opinion as to the relative strength of the arms is based on quite a wide practical experience in designing machines for similar work. I never designed a machine of that type which was put to actual test with regard to endurance. I never designed nor built a Simonson type machine at all.

Defendant rests.

TESTIMONY OF JOHN F. MARLER, FOR
PLAINTIFF (IN REBUTTAL).

JOHN F. MARLER, a witness called by the plaintiff in rebuttal, being duly sworn testified on

Direct Examination.

My age is 34. I am a lumber sawyer, head

(Testimony of John F. Marler.)

sawyer. At the Jones sawmill, Jones Lumber Company. When I was only a lad of a boy, I began working in smaller mills in the east, of only capacity of seven to ten thousand feet a day; from that I took up larger mills and drifted into the southern states; I spent a couple of winters in the southern states in larger mills, in the pine-mills, Then I came back to my home in southeastern Missouri, and stayed a year. Then I started west to the Pacific Coast. In 1910 I began working on the carriage around Grays Harbor, and from carriage work I built myself into sawing. In carriage work there are three jobs. Two are known as doggers, and the other one is known as setter. According to the rules and regulations of sawmill work, a man begins on the tail end of the carriage, dogging, and from there as there is openings he is promoted to the head end as dogger. He usually gets two bits or four bits more per day on the head end than he did on the tail end. While he is there he has a chance to learn to set, at spare times, and if he is successful at the time when a setting job is open, he gets it; that generally pays four bits to a dollar more each day, than dogging at the head end. And then if he is successful as a setter, commonly known as ratchet setter, the sawyer gives him a chance to saw occasionally; and if he is successful at that, why at the time a sawing job is open, or possibly sometimes the sawyers will know a place where they want a sawyer. On the carriage you have constant observation of the

(Testimony of John F. Marler.)

operation of the log turner, seeing it operate almost every minute of the day. In my present capacity as head sawyer, I have charge of the operation of a log turner.

Q. Now, will you explain to the Court, please, assuming that is a model which represents the patent here in suit; that the Judge is standing in front of a log turner; explain your position and the location of the band-saw, and just how you operate in practice.

A. The kind of a log turner I use in the Jones mill is built by the Allis-Chalmers people, it is similar to this model. The hook-arm is the same as this hook-arm but the main push-arm is a little bit different from that.

Witness is shown a photograph and asked whether the push-arm is constructed as shown in this photograph.

A. This shows identical main push-arm that I am handling.

Offered in evidence and marked Plaintiff's Exhibit 19.

The push-arm in the photo is identified by the capital letter A. In the model the push-arm is identified by the number 39. When you come back to the deck from a turn of log, you take the lever operating the Simonson turner, or log turner. The lever is known as four way lever; there are four motions to this lever, each way representing the way it is operated; one way turns the steam into the forward head or hook cylinder 40. The hook-

(Testimony of John F. Marler.)

arm is 41, and the hook is 42. This raises the hook 42. You then turn the steam into the forward head of cylinder 38 connected with the main push-arm 39 (or 43), which goes forward after the log. When you are over the log with the hook, you then throw the steam in the rear end of cylinder 40, which drops the pick or hook, catching the log. You then go back with both push-arm and hook-arm, and the log is turned; you then retire cylinder number 40 by putting steam into the forward head; you then put steam into the after head of cylinder number 38, crowding the arm forward, pushing the log back on the carriage. You then retire cylinder 38 and go forward with your carriage into the saw.

Q. Are those motions you describe of the hook-arm always completed before you move the carriage? A. No.

Q. What is the practice with regard to keeping the carriage at rest while operating the push-arm or the hook-arm?

A. As a rule I reach for the log before I stop the carriage; when the carriage is about six feet from the stopping point I start after the log. By the time the carriage is stopped—in medium size or smaller logs—I aim to hit the log with the pick of the hook-arm by the time the carriage stops. Very often I take the log off the carriage before it stops. Up at the mill where I am sawing, this Allis-Chalmers turner has a flexible hook, which instead of being fastened with three bolts

(Testimony of John F. Marler.)

horizontally like some of them, it has one bolt direct down through, which gives fourteen inches each way, making a total of twenty-eight inches bend sideways. Thus, if you hit the log with this hook before you stop, it doesn't crystallize the bolts or bend the hook, it just merely bends sideways, and you take the log off the carriage and it does no damage. The bumping of the arms by the log while the carriage is in motion, and the push-arms or hook-arms are then thrown forward, is likely to occur at any time.

Q. Tell us what would cause it, with regard to the formation.

A. There are, of course, a good many logs that have knots on them, some of them I call knots and some of them I call burls, limbs cut off and left long, I call that a knot, and if a swell or what is known as a burl, I call that a burl. In a good many cases in turning down a large log on the log turner, of course when that log comes down it comes down with its full weight, and especially until you get all four slabs off there is a time when there is a knot or burl on the top of the log, possibly it will be behind your hook-arm, and you start forward, unless you get the log turner completely down, this is likely to hit either the hook-arm or the push-arm, and give it side play, or possibly as the log falls and you crowd it back, maybe it will merely hit the arms or the arms will crowd in shear form, which would have a tendency to crowd the arms sideways on

(Testimony of John F. Marler.)

the shaft, or possibly strain the arm in some way. In order to resist such side thrust, it is necessary to make the hook-arm and the push-arm as strong as possible. My position is also looked upon as head rig in the mill. The head rig controls the output of the mill.

Q. What is your object in moving the log towards the log turner, moving the carriage that carries the log towards the log turner, before the log turner—the mechanism of the log turner—has stopped? Or, in other words, what is your object in moving one part of the device before the other is stopped?

A. To make all the time possible, as time is very precious at the head rig. The entire payroll depends upon the head sawyer of the concern. This in some places runs fifty-six cents a minute, possibly, other places maybe it runs as high as a dollar a half a minute, and all the time the head sawyer can save for his company means that much. And if you waited so that each device would be absolutely at rest before you moved the other device, you would be slowing down, you are lessening your output. If I were installing a mill, and had my choice of the structure shown in this Exhibit "A" of the interrogatories, and a structure as is shown in the model of the Cleveland patent, I would choose the Cleveland patent on account of the forked arm, with respect to the strength of the arm. In my experience along other turners of other constructions, I have seen an arm laying beside the blacksmith-shop at the

(Testimony of John F. Marler.)

St. Helens Lumber Company at St. Helens, and strapped back together with bars of iron and rivets, and this was back in 1916. I don't know just when broken, but I seen it there at that time. I have never seen any bed-plates broken, but I have seen them riveted together where they have been broken, and riveted back with bars of iron and rivets. With the heavy work that we have here on the Pacific Coast, it would not be practical to mount log turning devices just on the floor.

Cross-examination.

It would not be practical to mount a log turner directly on the floor because the floor is not strong enough to stand up for the work. The bed-plate lends requisite strength to the flooring. The bed-plate is anchored to the timbers, you see, of the floor, and you have both the strength of the plate and the floor too.

Q. Then it is just the strength of the floor that the bed-plate amounts to, as far as strength is concerned?

A. It makes more strength between the trunnions—commonly known as the trunnions of the cylinder and its bearing on the shaft; it increases the strength between these two points.

Q. In fact, is a metal strap that unites the parts of the plate together, is it not?

A. It is what?

Q. A metal strap.

A. No, it is not a metal strap; it is a casting.

Q. Maybe you draw a distinction between strap

(Testimony of John F. Marler.)

and casting. I mean a metal connection that unites the parts of the plate?

A. Yes. This machine shown in Plaintiff's Exhibit 19 was installed during the month of May and possibly a few days in the month of June of this year (1923) by the Jones Lumber Company. I have operated other log turners than the one shown here. I operated an Allis-Chalmers turner, one of the models, for the Beaver Lumber Company, at Prescott, Oregon; also operated an Allis-Chalmers turner for the Douty Lumber Company at Douty, Oregon. And I operated an old type of turner, I believe Allis-Chalmers, for the Bay Park Lumber Company at North Bend, Oregon. I learned to handle a log turner at Hoquiam Lumber & Shingle Company in Hoquiam, Washington. That is all. I was learning to handle a log turner during the years 1911 and 1912. I set ratchets on the carriage at Carlyle where they had a Sumner turner, and I handled it a slight bit occasionally—I don't know whether necessary to put that down. I was at the Bay Park Lumber Company in 1919 and at the Douty Lumber Co. in 1920 and 1921, at the Beaver Lumber Company in Prescott in 1922 and 1923. I began with the Jones Lumber Company when they installed the new turner. I began the 28th day of May. I worked a week before they put the turner in operation; they were putting it in at that time, and operating the mill at the same time.

Q. Will you compare photograph, Plaintiff's Ex-

(Testimony of John F. Marler.)

hibit 19, and Plaintiff's Exhibit 10, and state whether the arm "A" shown in the former is stronger than the arm shown in the model.

A. This arm and this one? Now, I really can't say this arm is stronger than this one, but the advantage it has over this one is you have room—you have a longer fork and you have room for the Hill Nigger; if you should ever want to install it you have room in the fork of the arm to install it, whereas in this one with shorter fork and center bearing, instead of two side bearings you have no room there for the Hill Nigger to operate in the fork. You see the main shaft is in two here; each fork of the main arm connects with the main shaft, leaving the yoke and main arm for the Hill Nigger also to operate up through the main fork.

Q. Referring again to Plaintiff's Exhibit 19, please state whether the connection between the arm "A" and the shaft upon which it is mounted is by aid of a single bearing or by aid of two bearings or connections?

A. Well, it is one bearing on each end of the shaft. You see the shaft is in two there; the shaft doesn't extend through there; the shaft is in two and it is all one bearing on each shaft; on opposite sides of the arm "A." The bearing is between the two arms here; the bearings of the shaft or bed-plate you see is between the fork of the arms in this arm. This arm is made in the letter A shape. This particular arm in Exhibit 19

(Testimony of John F. Marler.)

doesn't have what I would call a bearing on the shaft; it is anchored to the shaft; it operates the shaft, turns it. It is stationary on the shaft; it turns the shaft. This bearing 8 shown in exhibit model present in Plaintiff's Exhibit 19 is shown in the forked bearing in arm "A"—also a forked arm. The two bearings are between the forks of the arm. You have two bearings instead of one in the machine shown in Exhibit 19. These bearings are connected with the bed-plate. The advantage of the two bearings shown in Exhibit 19 for the arm "A" in that exhibit as a substitute for the single bearing 8, shown on plaintiff's exhibit model is that in the double bearing, or two bearings you have room to put in a Hill Nigger. A good many mills around over the country have both niggers—a turner and a nigger; they could put it in without yoking shaft around what they call the Hill Nigger. A Hill Nigger is a bar with teeth on it from two upright cylinders from below, these teeth pointing upwards; it turns the logs to the carriage and then pushes them back on. The Hill Nigger is used as a substitute for a hook, to make a reverse turn; where you want to turn the log to the carriage you can do that, or you can use the hook to turn it from the carriage. They are never used at the same time; that is impossible; they are used in lots of mills where they have both turner and nigger. It is quite an advantage in getting the material out of the logs. The purpose of the use of a hook and a nigger is to afford more complete

(Testimony of John F. Marler.)

control of the log in turning. Referring to Defendant's Exhibit 27, I don't remember of ever seeing one of that type. I understand this construction. This is the fork with two bearings on the bed-plate instead of having one single bearing; and it has a single arm; the arm is in a fork you see. The single arm is located between the bearings. With regard to the employment of single bearing 8, shown in plaintiff's exhibit model, with a bifurcated arm 39, straddling that bearing instead of the construction shown in Defendant's Exhibit 27, I would prefer the forked arm; I would prefer the forked bearing also. If the bearing were not forked, I would prefer the forked arm and the single bearing, because your shaft has a number of bearings along on it which support the shaft, and this is the only bearing your main arm has, and it is better for it to have two bearings than to only have one, in my estimation.

Q. Why better?

A. Supposing you were standing with your feet together like that, and would stand perfectly stationary, just like a statue, would be easier to push you over standing in that position than it would if standing in this position.

Q. In other words, you think the length of the bearing is an important feature?

A. In case you should ever strike it—

Q. Just answer the question, please. The length of the bearing is an important feature then as I understand? A. The forked bearing—

(Testimony of John F. Marler.)

Q. No, the length; the distance which the connection between the arm extends around the shaft is an important feature? A. Yes.

Q. Suppose you had an arm with a boss on it which gave an elongated bearing, as long for instance as arm 39 is, would there be any advantage in the forked arm over arm with boss as shown in Defendant's Exhibit 28?

A. I really don't know that there would, but you would never have room to put a Hill Nigger in there in case you wanted to; you only have a single arm, and if you decided to put in a Hill Nigger, would have to cut the shaft in two and have a yoke; cut and yoke around the Hill Nigger, which would weaken the bearing, and with shaft bearing you have room.

Q. But considering this construction shown in plaintiff's exhibit model you think there is no advantage in it over Defendant's Exhibit 28 which I show you?

A. Yes, I think it has an advantage over this. You have bearing in the middle, and the bearing or anchor of your forked arm on each side of the bearing, which supports it from side play, should you ever strike with that carriage—should something go wrong with your valve and the turner come up and go back and strike the arm; if supported on each side of the bearing it makes it stronger than if it is all alone. Now this happened to me once up at Douty; the nigger was up; I suppose that I possibly run against the nigger lever;

(Testimony of John F. Marler.)

I went inside to take something out of the guide, take a sliver out of the guide and was going back, and had emptied the carriage, and I started back, and the carriage struck the main arm, which was not a forked arm, not like Exhibit 19, but like defendant's exhibit. It was a crooked bed-plate with but a single arm; and I struck the arm. I knocked the shaft, the Simonsen shaft in end, which put the arm out of line with the cylinder. Then I couldn't get the turner down until we spaced the arm forward on the shaft to make up. By the crooked bed-plate I mean the bed-plate shown in the sketch on page 9 of the deposition of Charles E. Cleveland. That bed-plate shows a single bearing for the shaft to one side of the arm. If there had been two bearings as shown in defendant's model exhibit 27 instead of one bearing shown in the crooked bed-plate, possibly the accident would not have occurred.

Redirect Examination.

The push-arm and the hook-arm that I am operating at Jones Mill are standing up excellently; they have never given any trouble at all.

(Photograph showing the construction of a bed-plate in a structure such as shown in Plaintiff's Exhibit 19, offered, marked Plaintiff's Exhibit 20.)

The bed-plate shown in this photograph, Plaintiffs' Exhibit 20 is the same bed-plate as at A of Exhibit 19, on which the push-arm is mounted. The part marked B is really one casting but it is in two sections cast together. Bifurcated casting—

(Testimony of John F. Marler.)

forked casting. This bearing E has two bearings at the front; the casting is forked, and has a bearing on each end of the fork for the mainshaft; the push-arm A is connected on each side of these bearings, permitting room for the Hill Nigger to operate through the main arm A, should they ever want to install it. The construction of that bearing E in Plaintiff's Exhibit 20 could be effected in the bearing 8 of the model of plaintiff's machine, by cutting out a portion in the middle bearing so as to provide a space there, and if you would widen out the fork of the arm as it is shown in A it would be an advantage in my estimation, but to just take that much bearing out would be a disadvantage. By widening out the arms then you could cut out the middle portion. Giving as much bearing, but giving it in two places instead of one, which would be a help to the bearing, and it would also give room for a Hill Nigger to operate through the fork of the main arm. Now in that case where the Hill Nigger is used, the main arm, the push-arm is usually in the middle of the shaft, which would give the Hill Nigger practically the balance of the log which it has to have to do good work; we will say if this is the cylinder and the main arm is over here, and this helper was over there, then the shaft would be in two parts; the arm would be here and the shaft would be in two parts; the main arm would anchor to fit end of the shaft which would leave space for the Hill Nigger to operate and oscillate for turning the log

(Testimony of John F. Marler.)

to the carriage, in case they want it turned that way.

Recross-examination.

The Hill Niggers I have used are standing up fairly well. I am not using Hill Niggers at the present time, but I have used them; the turner that I am using now, as for the arms, they are standing up nicely. This bearing E in Plaintiff's Exhibit 20 is a double bearing, not a single bearing in the frame A, but it is a single bearing in the hook-arm, 41.

TESTIMONY OF P. R. HINES, FOR PLAINTIFF (RECALLED IN REBUTTAL).

P. R. HINES, recalled by the plaintiff in rebuttal, having been previously sworn, testified on direct examination.

Q. You may state what experience you have had in designing or checking over log turners to be installed in mills.

A. I have been investigating for the last two years the log turners of the Gedding & Lewis Manufacturing Company, for the redesigning of their machines, for which we purchased the patterns some time ago. I haven't only paid attention to the parts in the case, but I have also been looking into a number of other features, which have no relation to these patents; particularly my attention has been called to certain other matters which may or may not be patented later, but on the whole we have been investigating the machine from every possible

(Testimony of P. R. Hines.)

angle. We have not only examined our own, but we have examined others and have watched the action of the machine, and have been looking into one or two things very very closely over a period of two years. The function of a bed-plate is to make the machine self-contained, to give it a broad, firm base; if you get any settling or misalignment of parts you are very liable to get a very serious strain in the machine, so you put in a heavy bed-plate, to make the work all together, so it will be held in the position you want it to be held; a slight misalignment will make sometimes a very serious strain in the machine and cause breakage, so you want this bed-plate just as heavy as possible, and also naturally to hold the machine together. In a log-turner, naturally with high pressure of steam on, pushing out against a log there is a heavy strain thrown on the main bed-plate. Now, it is a well-known fact that in the old art the crooked bed-plates broke quite frequently under this strain. The difference in using a bed-plate for mounting the devices of a log turner, and using no bed-plate and having the mill mount the parts themselves, is if you design a steel bed-plate to contain the machine you know more or less the stresses and can design it fairly well, and you know fairly well what your steel will stand, especially in the tension; if you should put a timber bed-plate under that—steel does not warp or twist; it also does not change its dimensions under conditions of moisture—if you had put that on a heavy timber founda-

(Testimony of P. R. Hines.)

tion, that is a bed-plate alone and depend upon the timber alone, naturally the timber changes with moisture; the alignment of the machine changed, and timber is not generally considered a good material in tension; that is in flexure, or perhaps in compression timber is satisfactory, but even in constructing wood trusses we use steel rods for tension members; we don't use wood rods as a rule. Timber has high tension strength but you are uncertain in employing it, it would develop that full strength, so naturally we make heavy steel bed-plates. With respect to having an arm made forked at that part which is attached to the shaft compared with an arm which is simply straight, I will say very definitely on both that you have a side thrust prevalent in the machine, and naturally in designing the machine we have two stresses to take care of; we have the stress caused by the weight of the log in the direction that the cylinder lies, and also have the side thrust which we must take care of. In other words, in designing we must design that arm for two stresses; now it is not an opinion, it is a fact that in designing it for side thrust, in designing any member, if you can get the metal away from the center of the axis, which is neutral, you can get more strength for the same weight of metal, and that we are taught and it has been demonstrated in actual design practice, by means of experimental work, and also by mathematical demonstration. Now it is possible to design an arm with a broad base and with broad hub, and it

(Testimony of P. R. Hines.)

would be equally as strong, and that anyone would concede, who has a thorough understanding of mechanics, but it can be I am certain, demonstrated that the arm would weigh more. Now, we have to, in designing commercial machines, keep upmost at all times not only strength but price, because we have to sell this product, and castings are paid for according to weight, that is hundred-pound castings are generally quoted at a certain price, two hundred pound castings at a certain price, and when you get up to about a thousand pounds the price becomes more or less—that is we don't *just* from a thousand to eleven hundred pounds; we jump from probably a thousand to three thousand, the way the average steel foundry would quote, therefore any pounds of steel we can save and still get the requisite strength enables us to make competitive price, whereby we can go on the market and get business. Competition in this particular class of work is extremely close; a matter of a hundred dollars one way or the other would probably frequently decide the buy. The bed-plate shown as Defendant's Exhibit 27 can be constructed to do just exactly what the bed-plate shown in the Cleveland model does, but in doing it, in the first place, when you shove the arms up against the log you have a stress in the bed-plate, you would have a compression lengthwise of the bed-plate. Now in general, in designing structures or machines, if we can take an A-frame to stand a compression we would naturally do it; we certainly

(Testimony of P. R. Hines.)

would not take a V-frame. If we are going to pick up a heavy object with block and tackle, we use a shear which is an A-frame; we don't take a V-frame; if we do—we can do it—we have to make it extremely heavy. I concede that you can make this bed-plate equally as strong and equally effective, but you can't make in the same way, or as clean-cut and natural design as that one there. You are not only going to save in pattern and machine work, but you are also going to save on the erection of the machine, in the amount of timber you have to get in under the log-deck, and you also keep your space fairly clear for drop-down chutes going into the refuse conveyor. There would be a difference in regard to casting defects which might arise in a bed-plate such as illustrated in the Cleveland model, and the bed-plate such as illustrated in Defendant's Exhibit "A" of the interrogatories; that is the same as Exhibit 27. There is always conceded the possibility of casting defects in cast steel, and bed-plates are generally made of cast steel. Naturally the larger the casting and the more intricate the casting, and the more it departs from a simple structure in cast steel—I am not speaking of cast iron—the more possibility there is for warpage, and for casting strains of all kinds, and also blow-outs, but in general in casting steel you have to keep your lines as simple and the distribution of metal as simple as you can, because it is very difficult to case.

Q. State whether or not there would be any diff-

(Testimony of P. R. Hines.)

erence in cost in producing a bed-plate as shown in the Cleveland type from a bed-plate such as shown by Defendant's Exhibit 27.

A. Well, we have only one bearing on that, and in boring that the setting work required of mechanics, and line-up for the two bearings to be bored separately, even where they bore right straight through—I am doing estimating continually on parts and on all sorts of different work in connection with machinery, and I have accurate costs and am furnished accurate costs up to date constantly on all classes of work, and I can say without hesitation that double boring would cost more. I wouldn't say would cost twice as much but would say it would cost more. In the pattern work, patterns are expensive and naturally the more intricate the pattern, the harder it is for a pattern-maker to interpret the drawing; he takes more time in studying it; it takes more time for him to build it. In making a pattern of this kind he can make that pattern which is a little broader, he can make it almost in the same time that he would the two patterns; the only thing is, he uses a little more wood. The wood is not the expensive part of it. The more involved you get—it isn't a case of two half-bearings will cost the same as a bearing for patterns or models or anything of that kind; they always cost, thirty to forty, forty to fifty per cent more on account of the labor involved. Labor includes pattern work, drawing work and machine

(Testimony of P. R. Hines.)

show work, all of which are affected. The bearings require machine work.

Q. What would you consider, if you know, the approximate difference in cost in the construction of a bed-plate as shown by the Cleveland model, and the bed-plate as shown by Defendant's Exhibit 27?

A. Well, I have looked it over for several different reasons, and I would estimate that for a single bed-plate and a single bearing would cost you roughly about fifty dollars more to build. There would be two in each log turner. I have looked over the patents cited by defendant in this case.

Finding in the first place an example of the hook-arm: Patent, 408,760, issued to F. Simonson, August 13, 1889, shows a hook-arm actuated by a rope; Patent 448,558, March 17, 1891, to Flavel Simonson, shows a hook-arm actuated by a rope device, and a mechanically moved arm. On the same date to Flavel Simonson is No. 448,590, which shows an oscillating steam cylinder. Then there is 448,591 to F. Simonson, which shows the hook-socket actuated by the same mechanism which operates the arm; this is dated March 17, 1891. And then there is 448,592, to F. Simonson, March 17, 1891, which shows a hook, and the push-arm operated by an oscillating cylinder, and the hook-socket actuated by the same piston rod as actuates the hook-arm, but no bed-plate is shown, other than the floor. That is Exhibit 9. Exhibit 10 seems to be more specifically a method of steam

(Testimony of P. R. Hines.)

control to the cylinders, otherwise is very similar to Exhibit 9. We then come to 992,212, issued May 16, 1911, or ten years afterwards. This was issued to W. H. Kratsch, and assigned to the Challo-ner Company, who were the original manufacturers of the so-called crooked bed, Simonson type. This shows a very complete machine and shows the straight-arm and crooked bed type, which was employed before the straight line bed came into use.

Q. Will you please explain what in your opinion you consider the difference in result, as far as the mechanical operation is concerned between the crooked arm—bed-plate such as is shown in this Kratsch patent 992,212, and the straight bed of the Cleveland patent.

A. The machine as shown in Exhibit 20 was a successful machine, and embodies a great deal of the principles of to-day.

Q. You testified here with regard to the advantages obtained by the A-frame construction. I show you here a diagram and would ask you by means thereof to explain the advantages that you refer to. Let it be assumed that the member S is a shaft, and that on that shaft is mounted perpendicularly an A-frame composed of sides a' and a_2 and that a force is applied as indicated, and in the direction pointed by the arrow F. It is also assumed that the A-frame is tied to the shaft at points a_3 and a_4 , that is, at the base of the triangle. Now, will you kindly explain from that?

A. Well, in an A-frame, a stress applied in the

(Testimony of P. R. Hines.)

direction F—direction of the arrow F. would cause a compression in member a' and a tension in a2. The direction of the compression force and the tension force are indicated by letters on this sketch. The compression is c and the tension is t. Now, in a structure of this kind, it will be direct compression and direct tension. There will be little, if any, of what we call flexure. If it were a solid beam, you would get beam action and a flexure which is entirely different from the action of truss compression, and the stresses are much more equally distributed throughout the metal. In other words, in designing a structure of this kind, we take the direct areas as being in compression and tension, while in a solid arm of this kind, we would have to determine the flexure stresses which are zero at the center and become greatest at the outer margin. The result is, that all the metal is employed at its maximum strength, and for the same weight of metal, or for the same force "f" the weight of the metal would not be so great. In figuring strength, we figure for strength, but in figuring commercial machines we tend to keep the weight down as much as we can, especially out here on the coast, because we have to pay high freight, and there is no use making a machine any heavier than necessary. It only adds to the weight and the expense, both of manufacture and freight.

Q. State whether or not the design of the Cleveland arm has or has not any features of similarity to this A-frame structure.

(Testimony of P. R. Hines.)

A. The Cleveland arm, an analysis of it in my opinion shows that the arm is not only strong in the direction of throwing the log but is also strong laterally against every possible thrust which it might get through the log moving, the carriage moving, or being struck by carriage or any of those accidents that are liable to occur in handling a log quickly. In other words when you speak of strength of an arm or beam, you have to refer to what axis the strength is figured for. Very often, an arm might break on one axis, where might be amply strong on another axis for the work it is to do. This arm is strong in respect to both axis, either for weight of log on the arm, or for any side thrust which might come.

(Sketch offered in evidence marked Plaintiff's Exhibit 21.)

I was present in court and heard the explanation on behalf of the defendant with regard to the construction of T-arm and as also shown here on Defendant's Exhibit Model 28. Where a T-arm is used in a machine such as we are considering, and subject to side thrust would probably be nearer to the tip end of the arm, naturally for the hub is away below the carriage.

Q. Where are the breaking stresses?

A. Naturally the piston can hardly support this weight at all, so naturally the fracture would come near the hub. This frame can be made amply strong enough with certain disadvantages. The disadvantage would naturally be that it has to be made

(Testimony of P. R. Hines.)

a great deal heavier, and the reason for that is whether this is subject to flexure this way or that, the metal as far as working in the center does not work. Stresses are zero here and the stresses would increase proportionally from the distance it is from this neutral section; on one side would be compression, and on the other side would be tension.

Q. If you wanted to change that arm so as to do away with some of these disadvantages what suggestion would you make with respect to it?

A. We would probably make the section as near as we could to a T-section. The idea being to keep the metal thin at the neutral zone, or where it is not effective, and place it well out where the maximum effect would be obtained. We probably would make these ribs similar to fins or flange. The idea being to core out as much metal as you could at the non-effective part. We still have a great deal of weight in this arm as redesigned, on that sketch in your hand now.

(Sketch introduced and marked Plaintiff's Exhibit 22.)

I am inclined to think the steel foundryman would find some objection to this. In fact, I am sure here in town they would. We probably would try to get away from the large body of metal there is down in the lower part of the arm at the hub. Indicating in red pencil these changes, we probably would start to cut out that large amount of metal and place it still further out, as it is desirable, not only from a mechanical standpoint, but also from

(Testimony of P. R. Hines.)

a casting standpoint. I would say that the easy curves that are shown in Cleveland's design were drawn by a man who understood casting steel extremely well.

Q. What difficulties are apt to arise, if any, in casting a mass of steel to some particular shape?

A. Well, in casting steel we must not get a large accumulation of hot metal, as it is something that will cool suddenly at the other end of it so that as it cools off you will get what we call a casting strain. Now, it is highly desirable that this log turner work be done all in steel, and we go as far as we can in the stresses; then we go to a man who knows practically how to cast steel. The arch in the Cleveland arm appeals to me. You haven't great weight or volume of metal that takes a long time to cool, but you have a chance for a little expansion there that will not set up a big strain. I refer to the bifurcated portion of the Cleveland structure. There is something to give a little, and if it does give a little, they can correct in the machine-shop in the machine. You can get a cast strain in metal which is far more strain than any strain it is subjected to in operation. At the same time, we must be careful in getting distribution of metal properly on account of gas pockets; you must keep the metal all fluid so the gases will rise up through. If you get it cold on top, the gases will concentrate at one point and you will find when you put that in service that it is honeycombed, also known as spongy con-

(Testimony of P. R. Hines.)

dition. And this particular arm casts extremely well.

Q. Having reference to the two structures in the bed-plates, one of which is shown in Cleveland's patent, showing a bed-plate tapering towards the front, and there provided with a bearing for the shaft, which is straddled by the bifurcated portion of the arm, now compare that with a bed-plate which is spread at that portion in which the shaft is journaled, and has two boxes for the bearings of the shaft, spread a considerable distance apart; kindly explain the advantages or disadvantages which may arise in the two structures?

A. May I have those two models? (Takes Exhibits 26 and 27.) Well, this bed-plate here which is Exhibit 26 showing the Cleveland Patent, we have an A-frame bed-plate. Now, it is subject to both tension and compression in various stages of the work; it also has to furnish a solid bed and frame for the whole machine to operate from. As now built, and as it has been built, has been ample for the stresses. You will notice, however, that we have had to put several small tie rods, that is, they are cast integral, but to tie the frame together. Referring to portions designated in pencil, say C and D in Defendant's Exhibit 26,—if you subject that bed frame to compression there would be some tendency for the arms to spread apart at the trunnions. This is prevented by the two tie rods C and D and by the bolts in the bed-plate, but the structure acts all together, as all bed-plates do. It is very compact,

(Testimony of P. R. Hines.)

and for the same strength, a minimum amount of metal. Now, Defendant's Exhibit 27, I feel quite certain, can be made amply sufficient for the purposes it is intended, provided proper care is taken throughout, in fact, I see no reason why it could not be, but this frame, referring to the bed-plate, I think myself personally is a little out of proportion to the front end. I am absolutely certain that as broad a bed-plate would not be easy to case. Defendant's Exhibit 27 would require a larger flask and more careful pouring and gating. At the same time I am quite convinced that installation in the mill would cost more, as you would necessarily have to put two heavy stringers or three well spread out under this bed-plate. In actual operation these machines become covered with dirt and bark from the logs, and in modern installations it is very desirable to set these upon as few timbers as necessary, and of narrow width, so that the refuse may drop down through into a refuse conveyor down below, and I think the broader bed-plate does not give any more strength, at the same time takes considerable more room. These log turners are installed in a narrow, confined plate; it is necessary in the operation of the log turner that the log roll over the machine and onto the carriage, and when the log turner is not in actual use it occupies a very low place under the log deck, and the different parts are placed between the different skids of the log bed, and the area is very restricted for repairs and for ease of inspection, oiling, etc. There are from

(Testimony of P. R. Hines.)

three to eight or nine skids, over which the logs roll down, and generally one is placed between the push-arm and hook-arm cylinder so the logs may roll down on the carriage as needed. Taking into consideration the spacing of the journal boxes on the bed-plate, Defendant's Exhibit 27, there is one thing that I have not mentioned here. While not always necessary, it is always considered desirable to have the bed-plates alike. The reason for this is it only requires one pattern, one drawing, and consequently it is much easier to manufacture two things alike than two different. In this type of bed-plates (Exhibit 27) you must either bring out a long hub on the push-arm, or your hook and push-arm bed-plates will not be the same. The reason for that is that it is necessary to put a clutch on the hook-arm of some kind or other. The clutch is necessary to actuate the helper arms when you, as the sawyer says, go after the log, to raise the other arms jointly with it, at the same time it allows it to disconnect when you are through with it. Referring to Exhibit 29, being sketch supplied by plaintiff of arm "E" of the Simonsen patent 448,592, March 17, 1921, this arm is made double to provide a pocket for the hook F, but the push-arm shown in this patent 448,592 goes back again to a single arm with no bifurcation, lateral bracing or anything of that kind.

Q. Would you consider an arm constructed of two pieces bolted together over an intermediate piece as strong as an integral casting?

(Testimony of P. R. Hines.)

A. No, I would not. In the case of floor beams, which are subjected to more or less steady load, I think you can design a separating piece with a bolted connection that is entirely satisfactory, but I don't think myself that I would bolt two arms together that way, for the simple reason that to do a good job I would have to do an awful lot of machine work. I would have to bore for the holes; I would have to do a lot of facing on the finishing piece and facing on the arms, and I don't think it would pay to do all that work if I could possibly cast them together. There is no machine work whatever to be done afterwards on that particular separating piece, and as it is there naturally you would have to do a good deal to get a tight fit; you couldn't simply cast and put it in there.

Mr. ATKINS.—The perfectly obvious thing would be to cast that all in one piece, wouldn't it?

A. The obvious thing to do would be to cast it in one piece.

Having reference to that portion of this arm E in that Defendant's Exhibit 29, located directly next to the hub, or the shaft, I would not consider that construction as efficient as the Cleveland bifurcated arm, because the Cleveland arm straddles the bearing. There is a great deal of mutual support, and there is a great deal more strength in the Cleveland arm, for lateral strength, and I think lateral strength myself is important in this work, from my own observation. Considering now the Cleveland device as presented to us by Claim 12, the elements

(Testimony of P. R. Hines.)

by themselves to a large extent are old. The combination of them—it is very easy now to say well it is nicely combined and nicely gotten up. I don't know myself that if I were designing that, that I would arrive at it, but now that it is finished I can say, yes it is a nice combination of well-placed metal; it shows a clear understanding of the actual thrusts and strains that a log turner is subjected to, and I think there is no question about—well, in every way from a manufacturing standpoint and from a mechanical or engineering standpoint. If you take the whole thing as a whole, it certainly fills exactly what you wish to do with machine of this kind and at a minimum of weight and material. The elements making up the device all mutually support each other. The best way I can say is like a three-leg stool against a simple two-leg mechanism, which laterally is not stiff; this is supported in all directions. I have seen the Cleveland log turners, as manufactured by Geddings & Lewis, at the McCormick Lumber Company, McCormick, Washington; at the Standard Lumber & Box Company—I believe Buxton is their address; it is on the Tillamook line of the Southern Pacific; I have seen the Crossett Western Lumber Company at Wauna, Oregon; the National Lumber & Box Manufacturing Company of Hoquiam; and I have seen two installations at the Pacific Lumber Company, Scotia, California. I have studied all of them with a particular view of revising and improving our design wherever possible with reference more to the control of the

(Testimony of P. R. Hines.)

cylinders than any other feature. I found them operating satisfactorily in every respect except the cushion which has nothing to do with this patent.

Cross-examination.

I am thirty-six years old.

Q. Your testimony has been offered here as an expert witness. Will you please state what qualification you have to testify as an expert in this case?

A. I have been on test work and design since 1908. I have had a thorough training in engineering work. I worked under David Cole for two years, who is consulting engineer for about fifteen mining corporations. I was not only actively engaged on management, but did actual machine work besides. Fully 50% of the machinery that we installed was of our own design; we didn't buy standard manufacture. I was for two years chief engineer of the Caucasus Copper Company, Ltd., that had shops as large as Smith and Watson's Iron Works here in town. Due to high duties we built 75% of the machinery that we used actually on the ground in Russia. We built a great many things where here in the United States you would naturally purchase, things that the average designer is not called upon to design because you can go to some shop and buy them—they have built them that way for years. I was with the Allis-Chalmers Mfg. Co. several years, and while there was directly in charge of investigation work in the field, of the faults and troubles, and the redesigning of a machine that had just been on the market, embodying an entirely new

(Testimony of P. R. Hines.)

principle for a year and a half. I examined at that time over forty installations, went into their various troubles, and was active in the redesigning of the machine and the final perfection of it. I was also sales manager for the Dings Magnetic Separator Company of Milwaukee, whose work entirely started in a testing laboratory. We built some standard machines, but a great many of them were special, and a great deal of work was special development designed for special purposes, where perhaps only one machine would be installed, and no others would ever be sold again. I have built in Portland from my own design and under my own application for patent a 25,000 pound machine last year. The last two years I have been paying particular attention to the log turner, not only in view of this patent case, but also of more primary importance at that time was to perfect certain features which have given trouble not only in our log turners but everyone else's, and which still give trouble to-day and we are still investigating them. All of these matters have no reference to the present patent. I am a mining engineer.

Q. Not a mechanical engineer?

A. I got a degree as Engineer of Mines from Michigan College of Mines, Holton, Michigan, in 1907. I am not acquainted with the state of the art by practical knowledge of it at the time when Mr. Cleveland took his patent. My testimony in regard to the operation of these machines and the objections which I have mentioned is based on

(Testimony of P. R. Hines.)

examination of the machines themselves, examination of the operator, and actual observation of the machines themselves in actual service, and not only the observation of Mr. Cleveland's machine but there are a great many log turners installed on this river of the old type—Simonson crooked bed type. A new machine doesn't develop its weaknesses the first year. We find that it is only after years of service; the reason we pay particular attention to machines in operation is that, as the machines are operated over a period they commence to develop their weakness. The things we don't get in design; and the best way to get what we call the bugs out of a machine is to see the old machine; they have been through what we call the mill; they have been through this hard service of handling the logs. I would say that you have a better chance to-day to see the result of the different designs that you would have, say, twenty years ago, or ten years ago; weaknesses that are now apparent in the first three months even become more evident, and it is only by correcting these faults that we get a perfected machine.

Q. Have you observed personally any weaknesses in the Cleveland log turner? A. Yes.

Q. In respect to the combination defined in Claim 12 of his patent?

4. No, not in that respect; have seen weaknesses naturally, but not in that respect. I have seen—if you wish information—I have seen the arm broken, but the breakage in the way of the arms

(Testimony of P. R. Hines.)

has been entirely due to the hook-arm action, it has not been the push-arm. All of the breakages that I have seen.

Q. It is in the hook-arm?

A. It is in the hook-arm; yes.

Q. And you have only seen one breakage in that respect?

A. No, I have seen probably three or four.

I have not seen Defendant's Exhibit 27 in operation, nor have I any personal knowledge of it. I have not been able to compare these two machines in actual construction and operation. I have never been able to find one in this vicinity. When I testified in regard to the comparative merits, or demerits, it was in theory only. I am now in the employ of the plaintiff corporation. I have represented them out; I also have other business. I am their agent here. The Allis-Chalmers Company has no connection with the plaintiff corporation at the present time. They are exclusive licensees, however, under these patents. We reserve the right to manufacture for ourselves and for them only. That was arrived at two or three years ago; I am not prepared to state the exact date. They applied for license and we granted exclusive license to manufacture the Cleveland type of log turner, and since they have started to manufacture under this license they have sold some nine log turners in the last year and a half. They were builders of the crooked bed type, the old Calloner or Simonson type, and their business was going behind at that

(Testimony of P. R. Hines.)

time, but since changing over, they have sold a great many and they have paid their royalties up to date, despite any lawsuits on the Cleveland patents. The plaintiff corporation is not building any machines under the Cleveland patent now on account of competition, and on account of the defendant's superior freight advantages over us in the east. We have furnished one for abroad, but since acquiring the patent we have only manufactured one machine to my knowledge. We have bid, however, on at least six jobs out here in the last two years. Plaintiff's Exhibit 21 represents an A-frame, with what we term fixed supports, connected at the top. It is a diagrammatic sketch such as we use in the analysis of stresses, the same as you were instructed in under an art called graphical statics. That Exhibit 21 shows the stresses of the shaft and the side arms by a_1 and a_2 . This diagram is merely a picture of a triangle, it doesn't show depth or transverse strains. The strains referred to, are those which occur or might occur by a force applied in a direction parallel to the axis of the shaft S , and no other strain is considered on this particular stress sheet. We would term it a stress sheet. There are other strains that would come up a push-arm, for instance, besides those that are illustrated in this diagram. I have confined not my testimony to one class of strains, but that stress sheet, is used to illustrate the particular push-arm shown in Plaintiff's Exhibit 22 and in Defendant's Exhibit 28. There are other

(Testimony of P. R. Hines.)

stresses not taken into account in the stress sheet. I have suggested that the arm shown in Defendant's Exhibit 28 would be improved in strength by the addition of webs—ribs, indicated by red pencil lines in Plaintiff's Exhibit 22.

Q. Now, what would occasion you to suggest those changes?

A. Well, if you watched a sawyer log a log—I watched one the other day; he slabbed one side, and as he turned it, the log stood on just one edge. Now, you take and balance something on just one edge and say that log was a little tapering to boot, most logs are tapering—you get it up there; almost any movement you send it that way or that way; it isn't just at that particular moment and that particular position you are holding that; I can't hold it with the thin edge there. I want to get under it; it is not a round cylindrical thing or flat surface. The strain may be any way, and these logs weigh—and I think anybody will agree with me, they saw logs scaling ten thousand feet at a time, probably the average log scales five thousand feet and the weight of the green log is about six pounds per foot, board measure. In other words, we are dealing with a five thousand foot log weighing six pounds to the foot which would be thirty thousand pounds or fifteen tons; we often handle double that amount. Now, the question of side strains there is not only side strains but glancing strains of any kind, of a knot or burl, with fifteen tons which may be concentrated on this thing; we

(Testimony of P. R. Hines.)

naturally have to consider other stresses than the pure weight of the log on the arm.

Q. If I understand you correctly, if you discover in use the manifestation of a strain upon your mill, you would devise means of meeting that strain, would you not?

A. I would try to; I don't say I would do so; I would try to.

Q. But that would be the immediate suggestion overcoming that?

A. No, it wouldn't. It is very easy to sit here, and say, well, we would do so and so; after a thing is accomplished it is very easy to say what you would do, but before it is accomplished or before perfected it is very difficult to say what you would do.

Q. That is exactly what I am trying to get at. You have drawn a sketch in lead pencil on Plaintiff's Exhibit 22 sitting here at this table, and what I want to know is what that sketch suggested by the strains which you have observed in practice?

A. Yes, now that I have gone into it fully and examined it carefully and analyzed it, but on first thought, no.

Q. Well, if you had to meet a condition in which such strains were exerted, this Plaintiff's Exhibit 22 is substantially how you would meet it, is it not?

A. No; I had a similar case of cast steel, a matter of three or four years ago, it was before the war, and was not only my case, but there were three or four of us involved in it; we have a certain

(Testimony of P. R. Hines.)

stress, and we wanted to cast steel and we finally had to abandon it entirely; we couldn't cast it properly although we did this and we did that, and we couldn't get it. We finally had to make an enormously heavy section of cast iron to meet the condition. I can't tell you what I would do if I were back ten years ago or fifteen years ago—that I would do that; I don't know that I would. I am talking now in the light of the knowledge that has already been placed before us, but if you ask me—give me a new problem as to what I would do, I don't know what I would do. I have done so much designing and have had to revise my own designs after the machines have been in operation, and have seen things that I thought were absolutely correct in laying them out on the drawing board and then go out and see them fail, that I can't tell you what I would do if I had to design that arm at the start—was a brand new machine.

Q. Then you don't know that there is any relationship between the structure shown in Plaintiff's Exhibit 22, and the push-arm which Mr. Cleveland patented in 1909?

A. I can analyze the structure as it is to-day, or anybody else, and see that it is absolutely sound, but I can't testify to what went through Mr. Cleveland's mind, or anybody's mind. I can testify as to the logical and sound engineering principles and the beauty of the design as I have seen it to-day, and after I have seen a lot of log turners; I can

(Testimony of P. R. Hines.)

testify to that, but I can't testify to anything at the time of Mr. Cleveland's patent.

Q. Now these suggestions which you have made in red pencil on Plaintiff's Exhibit 22 are ordinary mechanical contrivances, are they not?

A. Well, they might be and they might not be; it is very hard to say. I can't testify as to what is mechanical and what is inspiration, etc. I am not in that position to be able to do it. In other words, the deed is done; I can't testify in regard to any of the things that preceded it.

Q. If you had a machine embodying Defendant's Exhibit 28 before you, would you not be able to arrive at improvements as you state, in the strength of the arm 28 along the line that you have indicated in Exhibit 22?

A. I don't want to make an impertinent answer, but I will say this: That I don't think I am any smarter than the men working on this at the time, and there was a very long period went by in which no one improved it, and I have no reason to believe that I would have any superior ability. It isn't any attempt to evade the question, it is just—for me to say here on the witness-stand, why yes, I could do it, I haven't that much egotism. I don't believe in my own knowledge of design so well as to say anything of that kind.

Q. You understand, don't you, that this Defendant's Exhibit 28 represents a straight arm provided with a boss on its shaft end, with which

(Testimony of P. R. Hines.)

Mr. Cleveland has testified he was acquainted before he made his invention? A. Yes, sir.

Q. Now do you think—is it your opinion that the arm, Defendant's Exhibit 28 is the substantial equivalent of the arm, the push-arm shown in the Cleveland patent?

A. No, I don't think it is substantially equivalent. I think that it can be made the equivalent by the expenditure of more money and more metal. That it is the equivalent, no it can't be.

Q. Then the only difference that you see between these two arms is one in respect to expense?

A. Not entirely in respect to expense; at the same time in this arm you must remember, this arm here, it isn't the single arm that we have to consider; it is the nice combination of design. Compactness, minimum cost of manufacture. I think that I very distinctly stated, was authorized to do so, that any manufacturer who wished to manufacture the split bed type with bifurcated arm, even straddling the bearing was welcome to do so, and we certainly would not waste our time in any patent litigation, and yet, despite the fact that we have substantially stated this we still want to manufacture in that way. Allis-Chalmers find they can pay us a very small royalty—it isn't very large royalty. They must find it desirable to pay us that extra amount; there is some question of money in selling machinery; there is always a question of money, but there is always a question of something that appeals, you can't say why; you

(Testimony of P. R. Hines.)

ask any mechanic, you can bring him down by cross-examination and analysis of it bit by bit and gradually bear him down, but he will come right back to it that he likes this; the ordinary sawyer will tell you that he likes it, and he may not have any mechanical training whatsoever, because he knows just from study himself that the thing is right, this combination. You take the arm alone it is—they are the same—you can make them the same, but you can't make them and fit them in; you can't take this arm and fit it into this mechanism.

Q. Can you point out any difference between this Exhibit 26 and Exhibit 27 other than mechanical variation? Is there any difference in principle in the operation of the two machines?

A. They operate substantially in the same way. You can take this machine, and if you are given a good designer, build a design of that and find out what is wrong and correct in here and there; yes, you can get a working machine; you can get a machine that will work and turn your logs.

Q. Now, I call your attention to the bed-plate shown in Defendant's Exhibit 26, and will ask you to state whether that does not show a bifurcated end, between which the cylinder which it carries is mounted in bearings—suppose that the opposite end of this bed-plate to which you have just referred were bifurcated, after the manner of the bed-plate shown in Defendant's Exhibit 27, it could

(Testimony of P. R. Hines.)

be made to operate to carry the push-arm shown in Exhibit 27, could it not? A. Yes.

Q. Then all that would be necessary to convert the bed-plate shown in Defendant's Exhibit 26 would be to bifurcate the end opposite the cylinder trunnions, would it not bifurcate it—in other words make this end like that, and put that arm in between there?

A. That is perfectly practical and I have seen photograph of machine so built.

Q. Please state the comparative costs as you estimate them between the bed-plate as shown in Defendant's Exhibit 26 bifurcated at both ends and the Cleveland machine.

A. That is taking Exhibit 26 and bifurcating?

Q. Yes, or with such changes as would naturally suggest themselves to an engineer.

A. Why I think that has been pretty well answered before; I could actually estimate it for you and arrive at it very closely, but I think off-hand—I think about fifty dollars. Then you have a greater expense—that is it doesn't make any difference if these are only half bearings, it costs you more to build two bearings than it does one. There is a rule of estimating I know; I have done so much of that kind of work. Naturally if you come out here you have to put more metal in here to hold this; you have to make this very strong across there because that is the A-Frame, mutually self-sustaining. How much metal exactly I can't say but you are going to use considerable more metal; your pat-

(Testimony of P. R. Hines.)

tern charges would be a little more, and what is also very important, your millwright work and the erection work will be more undoubtedly; I don't think there is any question about that; also the bottom of these bed-plates are planed, they are machined in other words, and your model is not exactly correct; ours is correct over there; but you will find that on the planing work, you take a tool going over here, just over these little ribs, it takes just as long almost to go over that little rib as though you went down the full length; if you examine the photograph of that bed-plate there is cut out in ours. If I bifurcate the bed-plate, I got to go out here enough to grab the outside of this frame. The minute I get from the A-frame with two A members down there, I have to go in and I have to tie these together; I have got to tie them rigidly all the way along to make them work together; I would have more cost on that.

Q. You still adhere to the opinion that the double bearing bed-plate will make the machine cost fifty dollars more?

A. Yes, I am sure it would.

Q. You have used the terms "compression" and "tension" and "flexure"—please define these terms and explain what you mean by them.

A. When an arm comes up against a log when the log is going down on the arm, you may push it back and forth, this is in flexure; the two reactions here where there is weight on there will give compression in the piston rod, and naturally

(Testimony of P. R. Hines.)

you can see it will cause compression in the frame; as you push from here out, pushing a big log out you will get tension in the bed-plate, that is when you are pushing on the log. Now you can get any kind of a stress here at times; you may get twisting or torsion; you may get like this; may just get a twisting of the whole bed, which you might get in casting; might get any casting strain; might also get the deck of the mill settling; it is not very liable to settle in that direction, more liable to settle in this direction, but may get any, and may get a twisting; in that case you have torsion. When you speak of flexure it means tendency to bend by a log that opposes resistance to the onward movement of the arm. In the operation of the machine you always have a log as the ultimate object to be acted upon by the machine.

Q. I hand you a copy of the Cleveland patent in suit and ask you to state if you know the element which distinguishes the structure defined in that claim from that which was old in the art at the time the Cleveland made his application.

A. It isn't a case of elements; it is a case of combination of parts well fitted together, and I couldn't pick out one single element in there.

Q. I ask you, with a copy of the Cleveland patent in suit before you, to refer to Claim 12 and compare it with the answer to XQ.-23 made by Mr. Cleveland in his deposition on pages 16 and 17. The question reads as follows: "Did you prior to your invention of the subject matter of

(Testimony of P. R. Hines.)

the patent in suit ever see the combination of a bed-plate provided at its outer end with a shaft bearing; a shaft extending through said bearing; and an arm in operative relation with the shaft; a power cylinder pivotally mounted upon the bed-plate and a piston rod working in the cylinder and connected at its outer end to the adjacent end of the arm?" Mr. Cleveland's answer to that question was in the affirmative. I now ask you to state the difference in the combination defined in that question and the one defined in Claim 12 of the patent.

A. Yes, there is a difference. Well, I think it is merely a matter of reading that claim 12 because it is just a matter of whether certain words are present or not. I can carefully compare these and read that so it will be exactly accurate, but to save time I would say "said arm being bifurcated and straddling the bearing formed upon the outer end of the bed-plate," is in Claim 12 and not in this question 23. That is the only difference I discover.

Q. In Claim 12 do you find any reference to a straight bed-plate? A. No, sir.

Q. Then what you have testified to in regard to the difference between a straight bed-plate and some other bed-plate is a matter outside of the claim, is it not?

A. Well, that is a legal question; I don't know. In speaking of straight bed-plate I spoke as an

(Testimony of P. R. Hines.)

engineer; from a patent side, I am not a patent lawyer and I can't say.

Q. You undertook to explain the terms of this patent and others?

A. Never from a legal standpoint; I don't know anything about that. I am merely explaining it from the side of an engineer.

Q. When you have testified in regard to the meaning of these patents, you mean to say you didn't know what the patents meant?

A. Oh, yes, I can read them—read them clearly, and I have already testified that there is no word “straight” in there, and whether outside or inside, the question is not sufficiently clear as to whether you refer to a specific answer I have made there, why I don't know, or whether you refer to some past testimony. If you will make your question specific, I will answer it specifically.

Q. Claim 12 does not call for straight bed-plate?

A. No, sir, the word straight is not mentioned.

Q. I think you said you are a mining engineer and not a mechanical engineer?

A. No, sir, I did not say I was not a mechanical engineer. I have no mechanical engineer degree, but I have worked entirely on machine design, mechanical work. I have done very little work in mining for years, although a great deal of my mechanical work has been for mining companies.

Q. You have testified, Mr. Hines, that the only breakage you are acquainted with in machines of the Cleveland type was on the hook-arm?

(Testimony of P. R. Hines.)

A. Yes, sir.

Q. Not upon the push-arm? A. No, sir.

Q. Can you explain how the breakage would occur on the hook-arm and not on the push-arm?

A. Yes. Our socket at the top was very weak, and we got a great deal of pounding in the pins there, and we have broadened it out; it was apt to break where the socket was held there. On hook socket No. 49, I believe we have added some brackets up there. We have not added any brackets in either arm proper. The push-arm has been very satisfactory. We got some little pounding in the pins but we have removed that.

Q. Referring to the Cleveland patent again, arm 49, for instance, is bifurcated at both ends, is it not?

A. No, I wouldn't say it was bifurcated in the same sense that the lower arm is bifurcated; that is a standard double end pin connection.

Q. How do you draw a distinction between the two bifurcations?

A. Well, we could draw a distinction there in that we are merely making standard connections, while bifurcation means spreading out from one branch. He uses the word "bifurcation" in the patent, but he actually has strong lateral bracing out there. We don't come out here to get lateral bracing, we merely come in there.

Q. In other words, you bifurcate to the extent you require at one end, and to the extent that you require at the other?

(Testimony of P. R. Hines.)

A. I wouldn't in a machine-shop call that bifurcated ends because I don't think the man would know what I mean. We would call it a U-end or double I-end, or something of that kind of a pin in connection. Both ends are forked, but not for the same purpose.

Q. Now, that forked construction is shown substantially, is it not, in Defendant's Exhibit 8?

A. I don't see a forked construction there. I see a double arm. It is two arms connected by a spacing-block "e."

Q. And all united together?

A. Possibly it is, and possibly not.

Q. I call your attention to the fact that bolts are illustrated there.

A. Bolts may be loose in mechanism of that kind; may easily loosen up.

Q. I think you testified that this construction would obviously be a cast construction.

A. I can't say that two double arms going straight up are the same as a V going up to straight arm. I can't testify to that because my engineering knowledge doesn't permit me to.

Q. It is a very fine distinction, isn't it?

A. Between my distinctions?

Q. Yes.

A. No, it is not a fine distinction; it is a distinction well based on engineering principles.

Q. Dealing with that as a mere object of apprehension, wouldn't you say that two arms connected, united to an intervening spacing member would be

(Testimony of P. R. Hines.)

bifurcated at both ends if that spacing member were intermediate to the ends of the two arms?

A. I don't think I could say it was the same thing; it depends on whether you want to quibble over the definition of what is equivalent or equal.

Q. No, I am trying to save all the time I can, but I want to bring pointedly to the Court's attention what had been done. It was an obvious variation to cast a member in one piece or to make it a plurality of pieces bolted together?

A. If you wish me to say that forking or hooking a member in mechanics is something new, I will be glad to say that it is old and concede the point.

Q. You have testified, Mr. Hines, that the arm, the push-arm shown in the Cleveland patent had distinctive strength? A. Yes.

Q. Will you explain why the push-arm shown in Plaintiff's Exhibit 14, which is the plaintiff's latest design of machine as I understand it, is varied from the construction shown in the Cleveland patent?

A. That is Mr. Sumner's type of machine; this is not ours. This is a different machine; it is our exhibit, but it is a different machine.

Q. You are right. I am mistaken, and the exhibit I refer to is Plaintiff's Exhibit 19.

A. I think that could be better answered by an Allis-Chalmers man who designed the machine. This is an Allis-Chalmers machine designed under our license and patents; it was not designed by us. I do not see wherein it does vary, that is, the hook-

(Testimony of P. R. Hines.)

arm is the same. The large push-arm varies, that is a variation that I don't, perhaps, recognize as a variation; the distinction between this machine and that machine is the bearings have been split in two and moved out a little to get a nigger-bar up through, enabling the Allis-Chalmers people to use the arm as a connecting yoke. In other words, the shaft does not go straight through.

Q. There are two shafts instead of one?

A. The shaft goes straight through the hook-arm, but not straight through the push-arm. In respect to the push-arm, there are two shafts, with double bearing between, outside of the arms of the push-arm. Now, I don't believe that this question comes within the scope of the patent, as this is a later thought, an afterthought; the object of this push-arm is to put that nigger-bar cushion in there, and get the nigger-bar working up through. In the old days we put a large yoke around there—around the shaft and got the nigger-bar up through there, but this is much more convenient and works out very nicely in this particular type of construction.

Q. But in the case of the push-arm it cuts out these advantages which you have endeavored to point out in respect to Plaintiff's Exhibit 26?

A. Naturally if you wish a nigger-bar, it is more expensive; it makes a more expensive construction.

Q. Please answer the question.

A. We know from actual experience that this bed-plate costs more to build than the single bed-

(Testimony of P. R. Hines.)

plate, because in building this type, we naturally acquire these costs.

Q. I don't think it is necessary to further insist upon an answer to the question.

COURT.—No, I don't think so, either.

Q. Referring to this photograph, which represents Defendants Exhibit "B" of the interrogatories, please state whether this photograph shows the skids, as you have called them, and in operative relation to the mechanism shown in the patent.

A. Yes, this shows the skid by a line, and so marked. The skids are supporting beams or bars disposed substantially at right angles to the rock shaft, and the part called lift-bar is the part which lifts the logs from the skids in presenting them to the push-arms.

Q. This push-arm marked A in Plaintiff's Exhibit 19 is a bifurcated arm, is it not?

A. I believe it to be from the photograph shown, as near as I can tell. The hook-arm alongside it is also bifurcated.

Redirect Examination.

The advantages which I testified to as existing in the Cleveland construction were not done away with in the construction shown in Plaintiff's Exhibit 19. The advantages are not lost. In fact with the bifurcated arms straddling the bearings, if you didn't have that—if you had a solid arm, you would have to go to yoke; that is certainly a distinct advantage, and I think myself that this construction here is the greatest advantage there is to the Cleveland

(Testimony of P. R. Hines.)

patent; but it does not come up in this case, as this is an afterthought and is not in Claim 12. In either case you would have to connect the two divided portions of the shaft together in various manners. We don't always put in a nigger-bar; very many log turners up here in this country are not installed with nigger-bar, and we never use this construction except where they want the nigger-bar. There is an obvious advantage in this. If you don't use it you must use a yoke there, which is a long casting lug that comes out and connects the shaft ends, so the nigger-bar can work up through, and they used that for a long time that way.

Q. Have you explained with a little sketch what the yoke would be in this particular case to the Court? If not, I wish you would draw it on the back of that exhibit with a lead pencil.

A. Somebody has drawn it right here.

Q This drawing is on the back of Plaintiff's Exhibit 19. Please identify with numbers.

A. The old style construction we used a cast steel yoke.

Q. Mark that, please, with a letter.

A. "A," which is U-shape. The function of the yoke which is keyed to the shaft is to join the two ends of the shaft, so that they will work together, but allowing the passage of a nigger-bar, which is to be located across the axis of the main shaft; in other words, it is a method of splitting the shaft at that point, so as to give space for the nigger. In the construction shown here by photograph Plain-

(Testimony of P. R. Hines.)

tiff's Exhibit 19, the two shaft sections are connected by a bifurcated arm A which has the combined purpose of a connecting yoke and an arm.

Recross-examination.

I show you Defendant's Exhibit 22, and ask you to state whether in that Exhibit the effect of the yoke which you have described is not obtained through the push-bar and without the use of a yoke.

A. Why, I don't know. I can't see enough in the photograph to say. It seems to me that he accomplishes the same purpose but that he can do it with a cushion bar; I don't know whether he can or not.

Q. What do you mean by a cushion bar?

A. A cushion bar or floor plate for the nigger to work on, as she comes up to strike back against. I can't see whether he can do that or not without seeing more than the photograph.

Q. You have never seen this form of machine?

A. No, I have never seen this form of machine, and I can't testify from just this mere photograph. If you show me a blue-print I can tell you better than I can from this photograph. There is not enough information back in here for me to determine, back in there to see whether he can or cannot. As far as I can determine from an inspection of this exhibit I will answer yes to that.

Mr. ATKINS.—I offer in evidence certified copy of file-wrapper and contents of the patent in suit.

Marked Defendant's Exhibit 30.

Witness excused.

TESTIMONY OF D. B. HANSON, FOR PLAINTIFF (IN REBUTTAL).

D. B. HANSON, a witness called in rebuttal by the plaintiff, being first duly sworn, testified as follows on direct examination:

I am seventy-five years old last July. My residence is Portland, Oregon. I am familiar with the design and construction of sawmill machinery. I never had any experience in building machines of that kind. My experience has been in selling, installing and operating. I went to work for Singer, Davis & Company, Indianapolis, Indiana, in 1884, who manufacture sawmill machinery principally, all stuff in connection with it. I was with them close to two years; then went with the Allis Company of Milwaukee, now Allis-Chalmers Company; at that time was the E. P. Allis Company, when I went to work for them. I worked for them seventeen years in the capacity of assisting in designing and selling and installing band mills and other machinery of different kinds, sawmill machinery; principally selling and making plans for new sawmills and designing new machinery. I saw a copy of the Cleveland patent in the last few days. I didn't examine it particularly but I have examined photographs and blue-prints and observed at a distance these models you have here, and I have examined that machine you have over there.

Q. Assuming that you were called upon to install a log turning mechanism without the knowl-

(Testimony of D. B. Hanson.)

edge that you have gained here during the trial of this case, and your own experience, what arm would you choose or what construction would you choose with regard to bed-plate, and the operating arm mounted on the bed-plate connected to an operative cylinder?

Q. What I mean to say, choose from the standpoint of efficiency and obtaining the best results for which the machine is designed.

A. Well, I would take, on account of the arm itself more particularly than anything else, I would take the design shown in the bifurcated arm, Defendant's 26.

Q. Which of these two constructions would you install in a mill as a log turner.

A. I would unqualifiedly take that machine, Defendant's 26, for two particular reasons: The bifurcated arm spoken of here to my notion gives better strength, and then the whole thing looks more symmetrical, neater, more mechanically constructed, according to my way of looking at it.

Cross-examination.

(Questions by Mr. ATKINS.)

Comparing one with the other, Defendant's Exhibit 26 and Exhibit 27, please state whether you do not regard the two as substantially mechanical equivalents?

A. I do not. The arm on Exhibit 27 is not equivalent to the arm on 26 because it hasn't got the side strain.

(Testimony of D. B. Hanson.)

Q. Suppose it had the side strain; would you say it was equivalent?

A. That is a different proposition; if it had the side strain then it might be equivalent.

The COURT.—What would be necessary to give it the requisite side strain?

A. It would have to be webbed out on each side in some way so as to give side strain, give the strain as the log moved back and forward on the carriage.

Q. Suppose the arm had the hub shown in Defendant's Exhibit 28, would you regard the one as substantially equivalent to the other?

A. The additional length of the hub as shown there, to my notion, would not cut any figure at all; the weak point in the arm is between the hub and the piston up there, and the same weakness is in this.

Q. Suppose the arm, Defendant's Exhibit 28, were constructed as shown in Plaintiff's Exhibit 22 in black lines with the numbers 2' and a2 added.

A. Well, that would be practically equivalent to this arm here, that bifurcated arm. Now, as far as strength is concerned for the movement this way, of course, that would be—give it practically the same strength as would be in the bifurcated arms, but it adds a lot of extra weight to it. The addition of such webs as a' and a2 to Defendant's Exhibit 28 would be an obvious mechanical expedient, for increasing strength, a thing I have known for the last thirty or forty years, but would make an awful clumsy affair of it.

(Testimony of D. B. Hanson.)

Redirect Examination.

(Questions by Mr. GEISLER.)

My last answer was it would make an awful clumsy affair. I have been in the sawmill business a good many years and I notice that here on the Pacific Coast particularly they like nice looking machines. Mr. Sumner will carry me out in that statement; like nice looking machines. This machine would be a clumsy affair, all spread out, not symmetrical; the bearings, if you continue in that way would have to have the bearings way spread apart like this here and covers more ground; might go to work and core it out in here, take out a part like that, representing the inside of that red line, there, but then you get a bifurcated arm. In my opinion the right thing to do with that arm, assuming that the webs have been added, would be to core it out. Cut it out and make bifurcated arm of it, is exactly what I would do with it. The purpose of coring it out that way would be to lighten it up. I have no interest in this matter.

TESTIMONY OF AUGUST DEMANGEON,
FOR PLAINTIFF (IN REBUTTAL).

AUGUST DEMANGEON, a witness called in rebuttal on behalf of the plaintiff, being first duly sworn, testified as follows on direct examination:

(Questions by Mr. GEISLER.)

My age is sixty; I live in Portland, Oregon. I am classed as a sales engineer. My business is engineer for sawmill machinery for Allis-Chalmers

(Testimony of August Demangeon.)

Manufacturing Company of Milwaukee, Wisconsin. They specialize in the manufacture of many lines of machinery, among other sawmill machinery, they specialize in the making of sawmill machinery as applied to the work on the Pacific Coast. I first worked at the machinist trade, beginning about the year 1880—along about the year 1880; I served my apprenticeship as a machinist, and during my early years as a machinist I worked in shops, and the chief business was the building of sawmill machinery; and along about the year 1887, I took charge of a machine-shop in the Tacoma Mill Company at Tacoma, Washington, and the purpose of the shop was to manufacture and repair sawmill machinery. About the years 1889, '90, '91 and '92, I was master mechanic, or I was the man in full charge of all the machinery, that is repair and operation, for large sawmill companies on Puget Sound. About the year 1902, I was engaged by the Allis-Chalmers Manufacturing Company of Milwaukee, Wisconsin, as sales engineer, and have continued in their employ until this time, with the exception of about three years; during those three years, part of the time, I was superintendent of manufacture for what is now the Coos Bay Lumber Company, Marshfield, Oregon, and a little over a year of that three year period I was part owner of the Portland Machinery Company of this city. During all of this time mentioned, since I first went to work as a machinist, I have at times spent my days designing machinery or machinery parts, or devising methods

(Testimony of August Demangeon.)

for manufacturing lumber. My present occupation is one that requires me to spend half or more of my time in designing sawmill plants or sawmill machinery, or devices and methods for manufacturing lumber; the balance of my time is spent in endeavoring to sell machinery. During the last few years I have spent a good deal of my time designing, among other things, log turners, or trying to improve log turners. I am acquainted with the Cleveland patent on log turner, have known of that patent perhaps ten years. I first came to know of it through an advertisement. My attention was first called to it through an advertisement in the trade papers, and through catalogs issued by the manufacturers of the turner.

Q. State whether or not to your knowledge the Cleveland patent is well known on the Pacific Coast, with regard to logging appliances.

A. I consider that the Cleveland type of machine is well known and has been well known for the past ten or twelve years by those interested in lumber or its allied industries.

Q. Please state whether or not you find any advantage in the Cleveland type of push or hook arm over the prior devices that you have known of.

A. Well, in my judgment the Cleveland type accomplishes the object desired in the best possible manner; that is there is the greatest strength obtained at minimum cost; the arrangement is such that it occupies the least possible space and all strains are taken care of in the most direct and

(Testimony of August Demangeon.)

simple manner; any other method known at the present time would cost more to manufacture, would occupy more space in the mill, and would be, perhaps, a little more difficult to install; the foundation would need to be wider, and perhaps a little bit more expensive.

Q. Now, I show you here a blue-print, which corresponds to Defendant's Exhibit "B" attached to the interrogatories, and also illustrated by sketch attached to the deposition of Mr. Cleveland, and being shown on page 9 of his deposition. Are you familiar with the kind of log turner shown by that sketch and exhibit? A. I am.

Q. Please state what if any difference there is between that type of log turner and the Cleveland device.

A. The principal difference between the two is that the bed-plate in this turner is curved or crooked and the strains caused by the pressure of the steam are not taken up in a direct line with the way they are applied; they are not resistive in a direct line; the tendency when the steam pressure is brought to bear on the machine—the tendency of this design is to bring an unnatural strain on the bed; this strain tends to straighten up the bed, to take the position of a straight line, and consequently makes it liable to fracture; the pressure of the steam also tends to push this bed out of its proper and true position; the result of the pressure applied is a side strain on the bed. With the Cleveland design, the pressure of the steam is resisted in a

(Testimony of August Demangeon.)

direct line, or in the same line of its application; there is no tendency to distort the bed itself and cause fracture, and no tendency to throw it out of the true line in which it was intended to remain. The Cleveland method permits building of the machine with the least amount of metal and also giving the maximum strength. I believe the Cleveland model can be built at less cost and will answer the purpose in every possible way.

Q. I believe you have testified this is known to the trade as the crooked bed type?

A. Well, they know this machine as the Simonson type; it seems that is the name by which it first appeared on the market. It afterwards became known as the crooked bed type of turner.

Q. Now, I show you here this Exhibit "A" attached to these interrogatories, and also Defendant's Exhibit 27, and will ask you whether or not you have seen a device—a log turner in other words, of the type shown by these exhibits. The blue-print which I show you here, constitutes Defendant's Exhibit "A"; now state whether you recognize that device there shown, that kind of a log turner—if you are familiar with it?

A. I first saw such a machine in British Columbia, New Westminster, approximately twenty years ago—approximately—and that is the only one I ever saw and that is all I know about it. I simply saw it twenty years ago. It didn't impress itself upon my mind particularly at the time.

Q. Now, comparing the device shown by the

(Testimony of August Demangeon.)

exhibit you last referred to with the Cleveland push-arm, state whether or not there is any advantage of the one arm over the other.

A. The advantage that appeals to me first of all is simplicity.

Q. In what machine?

A. Simplicity in the Cleveland machine, a single bearing in the Cleveland machine as against two bearings in this exhibit "A." Two bearings are entirely unnecessary when the work can be accomplished with one bearing; furthermore the arm being bifurcated and having considerable spread and supported each side of the bearing is stronger in my judgment than the type of arm shown in Exhibit "A." In other words, the purpose intended to be accomplished is accomplished in a simple and inexpensive and thoroughly satisfactory manner by the Cleveland design, and accomplished in a manner that I consider new and novel. At the time I first saw the Cleveland design I had never seen a similar combination of arrangement to answer the purpose.

Q. I call your attention to the Simonson Patent, Defendant's Exhibit 8, No. 448,591, dated March 18, 1891, and direct your particular attention to the arm there shown and as identified by E. Now assuming that the log turner shown by Defendant's Exhibit "A" attached to its interrogatories, were modified by an arm such as shown by arm E in said patent 448,592, what if any difference would there be in favor of this Exhibit "A" structure over the Cleveland log turner or *vice versa*?

(Testimony of August Demangeon.)

Assuming that the push-arm were made in Exhibit "A" like the arm E is shown to have been made in Defendant's Exhibit 8, namely, consisting of two pieces secured together by a spacing piece, state whether or not such a structure would be of equal advantage with casting bifurcated arms such as shown in the Cleveland log turner, that is the comparative merits of the arm shown in Defendant's Exhibit 8 and marked E with the arm No. 39, shown in the Cleveland model.

A. Well, arm No. 39 in the Cleveland model is a single piece arm, bifurcated at one end in order to accommodate a bearing. The arm marked E, Defendant's Exhibit 8 is two arms instead of one arm joined together by a spacing piece by means of bolts or rivets I judge by the picture, and is an entirely different appliance. The arm No. 39 in the Cleveland model, in my judgment, is a much stronger device than the arm E in defendant's model 8, less expensive to build and answers the purpose much better in every way.

Cross-examination.

(Questions by Mr. ATKINS.)

I have seen this Cleveland model in actual operation. The first one I remember seeing was at the National Lumber & Box Company, or National Lumber Manufacturing Company Mill, Aberdeen or Hoquiam, Washington, I don't remember which, on Gray's Harbor. I first saw that machine as near as I can tell you, maybe twelve years ago, and it was substantially like the model that is here.

(Testimony of August Demangeon.)

Q. State whether to your personal knowledge there has been difficulty experienced in respect to breakage of the arm 39 or 41 in the operation of the machine.

A. I have known of no breakage to occur on either one of the arms in the Cleveland machine, 39 or 41.

Mr. GEISLER.—Will you pardon me a moment. I want to ask the witness to explain this. I call your attention to Plaintiff's Exhibit No. 19 and to the arm or device therein marked A, please explain what that structure represents.

A. That arm is called the push-arm of the turner.

Mr. GEISLER.—What kind of a turner?

A. The Cleveland type of turner, manufactured by the Allis-Chalmers Company.

Mr. GEISLER.—Explain the particular construction there shown, and the purpose of it.

A. The construction shown is the same in principle as the Cleveland patent construction but the two sides of the bifurcated arm are spread more than in the Cleveland patent, in order to accommodate the spring cushion floor plates used in connection with the nigger, and in order to be able to locate that floor plate in its proper position.

Mr. GEISLER.—State whether or not at present it is sometimes found desirable to associate a nigger in a log turning device.

A. It is becoming quite necessary in this country to use a nigger in connection with the so-called Simonson type log turner, for the reason that much

(Testimony of August Demangeon.)

smaller logs are being brought to the mills to be sawn than formerly; it is becoming desirable to have both machines for use at any time.

Mr. GEISLER.—What is the function of the nigger?

A. The function of the nigger is the same as the function of the Cleveland and Simonson or Allis-Chalmers log turners—it is to turn the logs.

Q. (Mr. ATKINS.) Referring to the Cleveland patent in suit, Claim 12, please state whether that Claim calls for a single bearing at the outer end of the bed-plate.

A. In my judgment it does. It says “the bearing formed upon the outer end of the bed-plate.” It says “the bearing” which I take to be one bearing.

Q. Unless it is construed to be a single bearing it would be substantially the same as the construction shown in Defendant’s Exhibit 27, would it not—which I show you?

A. No, it would not. The construction shown in Defendant’s Exhibit 27 is a solid or not bifurcated arm, whereas Claim 12 mentions a bifurcated arm and a single bearing; this is solid arm or single end instead of double end, and two bearings instead of one, having two bearings, the bed-plate shown in Exhibit 27 of course has one. And it would be a bed-plate provided at its outer end with a shaft bearing.

Q. Now, referring to the Cleveland patent again, that shaft 7 shown in that, that is the rock shaft, on which the push-arm and the hook-arm are keyed,

(Testimony of August Demangeon.)

that shaft that is, how is that in the full Cleveland machine carried upon the floor of the mill?

A. It is carried in a number of bearings, some of which are part of the bed-plate of the machine, and some of which are independent pillar block bearings.

Q. Can you say how many bearings there are for the accommodation of the ordinary length of shaft used in mills?

A. The number of bearings depends on the size and length of the machine, and the type of machine selected.

Q. That is the support of the shaft upon its base does not depend exclusively upon the bearings that are provided in the bed-plate?

A. No, it does not.

Q. Can you state in a general way how the number of bearings provided in the bed-plate compares with the number of bearings necessary to carry the shaft in its full extent?

A. That depends upon the type of machine. In this exhibit before me, No. 27, there are two bearings upon the bed-plate, and two bed-plates are required, one for the push-arm and one for the hook-arm. In the complete machine there would be two bed-plates which, in this type of machine would make four bearings. If the Cleveland bed-plate were used, there would be one bearing on each bed-plate, making two for the complete machine.

Q. How many bearings in all would be necessary to carry that shaft?

(Testimony of August Demangeon.)

A. That depends upon the length—overall length of the machine. For instance for handling short logs the only bearings necessary would be those in the bed-plates; for handling long logs the shaft would be longer and would require independent bearings aside from those in the bed-plates. I have never seen a Cleveland type of machine built for short logs. I have only seen those in use in this country, which are for long logs and which require bearings aside from those in the bed-plate. I never saw a Cleveland machine built with only the two bed-plate bearings for the support of the shaft 7. A shaft ordinarily requires one, two or three bearings depending upon the length of the logs to be handled. That would make in the case of the Cleveland bed-plate five bearings in it.

Q. Referring to Defendant's Exhibit 8, you have stated that the push-arm E is, in your opinion, not so strong as the Cleveland push-arm, 39. Is that correct? A. Yes, sir, that is correct.

Q. If this arm E were cast in one piece as the Cleveland push-arm 39 is cast, it would be as strong as the Cleveland arm, dimensions being equal, would it not?

A. If it has the same general proportions of design, it would be.

Q. So far as it shows a bifurcated arm it is substantially the same as the Cleveland arm?

A. This doesn't show—this Exhibit 8 does not show a bifurcated arm. It shows two arms instead of one single arm. It has two arms.

(Testimony of August Demangeon.)

Q. And they are united into a solid structure by a spacing block "e," are they not?

A. They are not united in a solid structure at all.

Q. The specification says that the block "e" is secured between arms E?

A. I say that it is not a solid structure. By the term solid I mean one-piece structure.

Q. Then you mean a one-piece structure?

A. It is a built-up combination of two arms with a spacing-block.

Q. You don't intend to say, do you, that the building of such a structure by casting in one piece would be novel; that a structure could be cast in one piece as well as built up, couldn't it? A. It could, yes.

Q. And there would be nothing extraordinary about that if one wanted to build it that way?

A. No, sir.

Q. Perfectly well known in the art at the time that patent was granted to Simonson, that is in 1891?

A. What was perfectly well known in the art?

Q. The art of casting a device in one piece or building it up of a plurality of pieces?

A. Yes, sir.

Witness excused.

Plaintiff rests.

TESTIMONY OF T. B. SUMNER, FOR DEFENDANT (IN REBUTTAL).

T. B. SUMNER, a witness called in rebuttal by the defendant, having been previously sworn, testified as follows, on

Direct Examination.

(Questions by Mr. ATKINS.)

I heard Mr. Hines, a witness for the plaintiff, testify that in arriving at the best results in designing machines he employed drawings and theory and submitted them to a practical builder, or particularly to the casting department of his work. My experience relates to the practical manufacture of log turner. I have spent my whole life since a boy in bringing out and manufacturing machinery and more especially—we moved to Everett thirty-one years ago and been there in that sawmill line and shingle-mill. In my building of log-turners I have observed many breakages of the push-arm or hook-arm in this type of turner. I don't think it is confined to any one manufacturer; we have furnished new arms for the old Simonson type, made by Chalmers of Oshkosh; we have furnished arms for turners made by Allis-Chalmers; we have furnished arms for turners made by ourselves. It isn't confined to any one particular manufacturer. They have not always been confined to one particular place, but more so to one particular place, that is to one part of the arm.

Q. Have the breakages that you have observed

(Testimony of T. B. Sumner.)

occurred transversely to the axis of the rockshaft or longitudinally with reference thereto?

A. I can't call to mind of ever seeing a fractured arm, that I noticed the fracture, that it would be parallel to the shaft; it has always been parallel with the cylinder, so that it would indicate that when the strain came and the breakage occurred it was always in the turning or the pushing of the log. When the log-turner is in position, the carriage is above the shaft of course here. The operator to-day becomes so expert—I might say that so far as the practical workings of the turner as we build to-day over the old Simonson turner, it practically has no new features; the only thing that we have been trying to do would be merely to possibly simplify it a little and to strengthen the parts that have broken. Now, the old Simonson will reach over and catch a log and turn it to you and push it back just as well as the present turner, but with the present operation and the speed that the mills are all trying to get up to, the operator, that is the sawyer, becomes so expert that he will reach over with the hook-arm catch that log turn it towards you, turning it towards you before the log comes clear down; he catches it with the arm and pushes it back against the knees of the head block; doing that it throws the arm up in this place where they are usually broken. We have had breakages in the hub, but more breakages up in this position here, and never have any—I can't recall to mind ever noticing the fracture of the steel to see in what position, if we

(Testimony of T. B. Sumner.)

could, that the arm was broken so as to strengthen it. We have repeatedly kept adding to the power, strengthening this way, strengthening this way to take—to strengthen it, pushing in line with the cylinder, transversely to the axis of the rock of the shaft, that is in line with the operation of the cylinders and of the piston rod, and I can't call to mind ever a broken casting come in to replace where the fracture shows that it was caused by anything that might be on the log and striking this as the carriage passed forward and back. In my judgment, the log couldn't be retained on the head block and cause a fracture of either the hook-arm or the push-arm. Now, we have had these—this same thing broken, the bed-plate, so bringing it out here has not done away with the trouble, referring to Defendant's Exhibit 26. We have located a great deal of the trouble of broken beds. I think it may not have been made clear to the mind of the Court; the log, when it is operated upon by the turner is held in operative relationship to the push-arm and hook-arm. I will explain briefly how the log is held so that it receives the turn we will say from the hook-arm. It is turned with the hook-arm, it goes over and finds the log like that. It is practically held up here on the knees on the carriage. As I say, the breakage is caused—if I had a square block I could—as this comes over and catches this and it rolls this way, and being so expert when this is rolled over they will catch this and throw it back before it comes down on to the trip skids. The hook block

(Testimony of T. B. Sumner.)

drops out of the way just substantially the time that the push-blocks begin to drive it forward if he so operates that. That is the ideal operation, then he takes the push-arm and pushes it back against the knees. I have located the cause of breakage in the arms in the bed-plates. All the objections that have been brought out seems to be along the lines because the bed-plate on the old Simonson turner was crooked. That is a mistake. I dare say that if you will take an old Simonson to-day with the crooked bed-plate and take the improved skid-lift, attach it to the old Simonson turner, I don't believe you will have any broken beds, for this reason: that under the old type in the raising of the skids the cams were on the main shaft; then as you would roll that and raise the slides up and the logs were turning away, all pounding was on the trip skids and the skids rested on the main shaft. When one of those immense logs is turned over and it comes down smash on the skids; the trip-skids are skids that are located on the sides here; that is supposed to take in modern practice now—actuated by a single cylinder—it takes this heavy pounding and this heavy jar off from the bed. Under the old method it was all on the shaft because the cams were all on the main shaft, and the end of the skid rested on the cams so the whole pounding the full force of the blow was always on the shaft, and that was what happened; the crooked arm having such a small bearing on the wood, with this constant pounding kept pounding the narrow end of that into the

(Testimony of T. B. Sumner.)

wood, and that was what caused the breakage; it wasn't because it was crooked, because the strain was endwise or the reverse. There was material strain lengthwise of the bed-plate in the operation of this machine to a certain extent; there is steam pressure, and it would be strain back this way; the strain here to a great extent is relieved with the exception of what might be caused by the fulcrum here drawing back. The pounding strain is not a strain on the bed-plate, forward and back as it were; it is pounding up and down, and pounding the narrow end into the wood, allowing it a chance to play, or if they kept tightening it up, to put a curve in the bed, which causes it to break; invariably they break up here. It is the same thing we have had broken under the old type which were first built for the Muckletoe Lumber Company; has one of this type broken in here. From my observation the breakage of the bed-plate comes from the driving from above, I think ninety per cent of it. For this reason, were all getting,—if you will notice we have always—that is what called our attention to bring out, widen out—widen out the bed; you might see a circular what we have, shows you we have been working along that line, in that wide double bed which was put in at the Snoqualimie Lumber Company Mill—I think was built either eight or nine or ten years ago; I think it was somewhere about eight or ten years ago. There is where we brought out the bed, widened it out—the bed outwards; we have some have not been of the

(Testimony of T. B. Sumner.)

Cleveland type bed. The idea is to cover more surface to resist that pounding. The effect of the pounding upon the bed-plate naturally breaks it sooner or later, not the strain lengthwise of the bed-plate or crosswise of the bed-plate; I don't think that had very much to do with the strain lengthwise. The breakage strain comes from bending the bed-plate down into the wood upon which placed, and being loose, unless they kept the bolts tight, but if they kept the bolts tight, it would put a curve in this end of the bed. That would be proven by nearly all of them breaking through here. That is the result of my experience and observation. We tried to have them send in the old casting on the arm that we might notice the fracture and try to locate where it broke, and if we can see the break try to straighten the pattern and overcome the breakage if possible. In the improved skid-lift the tendency to breakage in the bed-plate is greatly relieved. I will explain the development of our log turner. (Circular received in evidence subject to plaintiff's objections and marked Defendant's Exhibit 31.) Referring to the yoke that was in the main shaft in order to use a nigger, the main objection to using that yoke in the main shaft was for the reason that you had to place that back of the push-arm. If you placed it back of the push-arm, it naturally came too far back for the center of the log; therefore it was necessary to run the carriage farther back in order to get the center of the log to operate the nigger. Referring to De-

(Testimony of T. B. Sumner.)

fendant's Exhibit 31, I find there a diagram of the yoke referred to yesterday; now that being placed so far back, as I have said, that if it was an ordinary log, in order—it is for the purpose of bringing the nigger-bar up through for turning small logs, as Mr. Demangeon testified.

COURT.—Is there room to place it between the hook-arm and the push-arm?

A. No, it wouldn't do there; then we conceived the idea of bringing the nigger-bar up through the push-arm; we brought out that idea. We abandoned the yoke; we had then one continuous shaft and it brought the nigger in a better position for the center of the log, but it never had been probably thought of, the design, until we brought it out; it is shown right here; it is shown there. Plate 2; by making the bed wider, not only for this purpose but to resist this strain of constant pounding and bringing the nigger-bar up through the center of the push-arm; that was taken from the photograph of the machine that went into Snoqualmie. It was built either eight or nine or ten years ago. The Snoqualmie Falls Lumber Company were the originators. The effect of the push-arm shown in Plate 2 of your Defendant's Exhibit 31 was to combine in the push-arm a yoke and it was to relieve the necessity of a separate yoke and put it in the push-arm, combining the two in one, and bringing it in position farther forward, so as not to be necessary to run the carriage farther back in order to get the center of an ordinary length log. It was to elimi-

(Deposition of Charles E. Cleveland.)

nate the yoke by combining the two in one. We not only got that but we got greater surface on the wood to resist the pounding if it should be installed with the old style cams.

Witness excused.

Defendant rests.

There was also duly taken the deposition of Charles E. Cleveland as a witness on behalf of the plaintiff, pursuant to the agreement of the parties, before Bessie Whitmire, a notary public, November 14 and 15, 1923, at Dothan, Houston County, Alabama.

DEPOSITION OF CHARLES E. CLEVELAND,
FOR PLAINTIFF.

Said CHARLES E. CLEVELAND being duly sworn deposed as follows:

My name is Charles E. Cleveland, my age is 62; I reside at Kendallville, Indiana, and am a retired manufacturer. I am the same Charles E. Cleveland who obtained U. S. Patent Number 933,231, granted September 7th, 1909, for log handling mechanism.

Printed copy of said patent identified by witness and marked Plaintiff's Deposition Exhibit "A."

I am not the present owner of this patent. I sold the same to D. J. Murray Manufacturing Company, a corporation of Wisconsin.

Q. I hand you a paper writing purporting to be an assignment of this patent Number 933,231, among others to the D. J. Murray Manufacturing Company, and would ask you to identify same.

(Deposition of Charles E. Cleveland.)

A. This is the assignment to said corporation of the above-mentioned patent. It is dated March 30, 1917, and signed by me.

Copy introduced by agreement of Counsel, with the same force and effect as the original would have if introduced in evidence and copy marked Plaintiff's Deposition Exhibit "B," by the notary.

I have handled log-handling mechanism over a period of approximately twenty years, prior to April 13th, 1909, because of my being engaged in the designing of sawmill machinery. I have eight or ten other inventions relating to log-handling or sawmills mechanism, and I obtained U. S. Patent for all of these inventions. Referring to claim twelve of the patent Number 933,231, this claim refers to the combination of the bed-plate 3 or 4, provided at its outer end with a shaft bearing marked 8, with its shaft, 7, extending through said bearing. The arm number 39, or 41, the said arm being bifurcated and straddling the bearing formed upon the outer end of the bed-plate. The power cylinder 38 or 40, pivotally mounted upon the bed-plate. The piston rod 47 (only one being numbered) working in the cylinder and connected at its outer end to the adjacent end of the arm, 39. (The piston rod 47 is connected to the oscillating casting holding the hook, 42.)

Q. Will you state generally the circumstances surrounding the conception and development of the invention defined by this claim twelve.

A. (By way of Explanation.) Simonson's Log

(Deposition of Charles E. Cleveland.)

Turning Machines, are known in the art as a particular type of machine, regardless of who the manufacturer is, and in referring to my invention, I use the name of Simonson Turner broadly. Some time after Mr. Simonson secured patents on his turner Numbers 408,760; 448,588; 448,590; 448,593; Mr. Simonson called at Fon du Lac, Wisconsin, and endeavored to arrange with DeGrote Giddings & Lewis, to manufacture his turners. About that time or shortly after, I was employed by the said DeGrote Giddings & Lewis, as sawmill machinery designer, and while the said DeGrote Giddings & Lewis were not interested and did not care to manufacture the turners for Mr. Simonson, it caused them to think seriously of manufacturing heavy sawmill machinery for the Pacific Coast, believing it was a good field for their operation, therefore they discussed from time to time with me the designing of machinery for that purpose. Therefore, when the Simonson's patents were about to expire we gave serious thought to the design of an improved Simonson turner, and this led up to my invention and subsequent patent. I first conceived the invention defined by said claim 13 the first of 1907. I fix this time in my mind because at this time Giddings & Lewis Manufacturing Company by whom I was employed were desirous to vigorously work the Pacific Coast Trade, and desired that I complete the working drawing of an improved Simonson turner. I first disclosed the invention defined by said claim 12 to others some time in

(Deposition of Charles E. Cleveland.)

January, 1907. This disclosure was made to C. F. Larzelere, Uric Anderson, and to H. W. Cleveland, my son. Mr. Larzelere was the Superintendent, Uric Anderson and my son, H. W. Cleveland, were draftsmen for Giddings & Lewis Manufacturing Company. I believe C. F. Larzelere is now at Flint, Michigan. The whereabouts of Uric Anderson is unknown. My son H. W. Cleveland is at Wausau, Wisconsin. The first drawing of the invention defined by said claim 12 I made some time in January, 1907. I have not this drawing with me. All my memoranda is at Kendallville, Indiana. I was only notified Nov. 7 that my deposition would be taken here and have not been at Kendallville since. The first log turner embodying said claim 12 was built and shipped to the Albion Lumber Company, Albion, Mendocino County, California, January 20th, 1909. This log turner was successfully operated. I cannot remember the number of log turners subsequently installed but there were certainly quite a few, among which, one was shipped to Portland Machinery Company, Portland, Oregon, and another to Brace & Hergert Mills Company, Seattle, Washington. The actual construction work began about October 1st, 1908, on the turner shipped to Albion Lumber Co. D. J. Murray Manufacturing Company in a letter dated December 12, 1922, to me asked me for practically the above information, and with considerable effort I took the matter up with Giddings & Lewis Manufacturing Company, asking them for the dates that

(Deposition of Charles E. Cleveland.)

the first turner was made and shipped, and a copy of this letter I brought with me, and from which I quoted. The object of the invention defined by said claim 12 was to build a machine having a stronger arm either for the push-arm or hook-arm, and the construction shown in my invention was much stronger arm than any other in use at that time.

All of the turners of which I had knowledge at the time I brought out my invention had straight arms with a single bearing on the shaft. Now, it is a well-known fact that the weakest part of the log loader arm is near the shaft, and not in fact near the top of the arm. It was therefore my intention to construct an arm that was stronger near the shaft, or in my belief the weakest part. This I accomplished by making an arm having two bearings on the shaft in place of one, or, bifurcating the lower end of the arm. At the time I conceived my invention, in the year 1907, I saw the Simonson's Log Turner constructed by the Chalmers Machinery Company of Oshkosh, Wisconsin, and later saw them in actual use in a number of sawmills on the Pacific Coast. These Simonson turners worked successfully in a general way, but in visiting the sawmills on the coast, I was visibly impressed with the number of broken log loader arms generally laying around these mills. The bed-plates as contained in the Simonson machines were all built with an offset, or, in other words, the bearing at the end of the bed-plate in which the shaft rotated, was not in a center line

(Deposition of Charles E. Cleveland.)

with the steam cylinder, but was to one side of the same. The arms were constructed with a single bearing on the shaft, as shown in Defendant's Interrogatory Exhibit "B." The number of broken arms I observed around the mills prior to the conception and development of my invention influenced me in constructing the pusher and hook arms with a double-bearing on the shaft, or, in other words bifurcating the shaft end of the arm. The differences between the Simonson bed-plate, and its bearing and the bed-plate, bearing and arm connection, as developed by me and defined in said claim 12 is this: The original Simonson as before stated, has a bed-plate with the shaft bearing offset to one side of the center of the cylinder, whereas in my construction the shaft bearing of the bed-plate is in direct line with the center of the cylinder and push-arm, and thereby equalizes the strain. The advantages I proposed to secure by the changed construction was to get a stronger and more symmetrical machine. By making the arm bifurcated and thereby having a more substantial bearing upon the shaft, and a stronger arm, and having the shaft bearing on the end of the bed-plate in direct line with the center of the cylinder, which construction was better to withstand the thrust of the cylinder. The primary cause of breaking the arm of the old Simonson turner was because of poor design. The arms were all straight arms, whereas, in my construction the arms to which the piston rods are attached have a double bearing on the shaft,

(Deposition of Charles E. Cleveland.)

allowing for a more secure attachment to the shaft, straddling the end of the bed-plate, coming together and forming a single arm from about midway to the top of the arm. This construction permitting a more equal distribution of the metal, and thereby making a broad, deep, and strong arm. I also observed that other parts associated with said arms were broken, principally the bed-plates. By my invention I intended to correct this condition by making a so-called "straight line," bed-plate, with practically all strains in a straight line. It is a well-known fact that a bed-plate constructed on a curve, or as I called it a crooked bed-plate, when the strain is applied has a tendency to straighten out, therefore, it is not as strong a construction as a bed-plate built on a straight line principle, as my construction is.

I am in the south at the present time because my physician thought it would be beneficial for me to spend this winter in a warmer climate, my home being in Indiana.

Cross-examination by Mr. ATKINS.

By a designer I mean a man who originates and who details, or makes the detail drawing. I attended to that. My activities covered practically all of the United States and Canada.

Q. In your answer 25, you refer to a letter as giving the dates of construction of your turner as you have testified. Without that letter would you be able to fix by personal knowledge and recollection only, any of these dates?

(Deposition of Charles E. Cleveland.)

A. Not very accurately.

I do not know whether the first drawing of my invention is in actual existence. My object in constructing the subject matter defined in claim 12 of the patent in suit was not only to make a stronger arm, but to arrange the same to be in direct line of the forces exerted on it, and therefore more equally distribute the forces.

Q. Did you introduce any new principle of operation into the Simonson log turner by your invention, so far as it is defined in claim 12?

A. I do not think that a new principle was introduced, as I understand it, by my invention. My improved log turner so far as defined in claim 12 turned the log in the same way as the old Simonson turner, but by a mechanism, which I regard as better. When I made my invention I did not know of any straight bed-plate in the Simonson type of turner, or of a bifurcated hook-arm in that type of turner.

(Witness is shown copy of patent (No. 10) Simonson, No. 448,592, issued March 17, 1891.)

I do not find in the drawings of this patent a bifurcated hook-arm. It is not a bifurcated arm in the sense that my design of the hook-arm is, as mentioned in claim 12. The arm E shown in figures 1 and 2, of this patent is a bifurcated arm to the extent only, that it has a divided bearing upon the shaft. The arm E shown in the Simonson patent #448,592, illustrates two separate arms, with a distance piece bolted between these

UNITED STATES PATENT OFFICE.

ISAAC H. COLLER, OF POUGHKEEPSIE, NEW YORK.

IMPROVEMENT IN HARVESTING-MACHINES.

Specification forming part of Letters Patent No. **48,658**, dated July 11, 1865.

To all whom it may concern:

Be it known that I, ISAAC H. COLLER, of Poughkeepsie, in the county of Dutchess and State of New York, have invented a new and useful Improvement in Pitman-Connections of Reaping and Mowing Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, form-part of this specification, in which—

Figure 1 is a perspective view of my invention, as applied for the purpose intended. Fig. 2 is a top view of my invention disconnected from the cutter-bar of a harvester. Fig. 3 is vertical section in the line *xx* of Fig. 2. Fig. 4 is a plan or top view of a harvester with my invention applied to it. Fig. 5 is a front view of the same.

The same letters of reference in the several figures indicate corresponding parts.

In the practical operation of reaping and mowing machines it is found that considerable friction is induced at the point where the pitman-rod of the cutter-bar connects with the crank-pin of the driving-shaft. This is due to a deflection of the cutting device out of a plane with the pitman-rod, such a deflection being produced by the resistance of the standing grain as the harvester moves forward. This friction I propose to obviate, and still use the simple and almost universally adopted pitman contrivance, without increasing materially the cost thereof.

The nature of my invention consists in the application, between the harvester-sickle and the crank or eccentric of the pitman-shaft, of a sleeve which has an auxiliary box at right angles and exterior to its bore formed on it, for the connecting-pin of the harvester-pitman to pass entirely through and work in.

To enable others skilled in the art to make and use my contrivance, I will describe the same with reference to the drawings.

I have shown the pitman-shaft in Figs. 1, 2, and 3, as being arranged horizontally; but it is obvious that it can be placed in a vertical position if the heel of the sickle-rod is perforated vertically, or without this change if the forks on both ends of the rod are in the same plane.

A is the eccentric or crank shaft which drives the sickle. It is shown applied on the gear or main frame of a harvester in the usual manner. The wrist-pin *a* of this device A is made longer than usual.

B is the sickle or cutting device.

C is the pitman-rod. Its inner end, *b*, is forked; so, also, is its outer end, *c*. The latter forked end is formed by cutting out the metal horizontally, the former by cutting it out vertically. The prongs of one fork, therefore, are at right angles to those of the other. The fork *b* straddles the heel of the sickle-rod, and is confined by a pivot, *f*.

D is the sleeve, which fits loosely on the wrist-pin. This sleeve is cast with a vertical bore, *d*, and therefore is enlarged near the middle of its length and exterior to its bore *g*, as represented at *m*. By thus enlarging the sleeve the bore *d* can be entirely through the sleeve, and there will be sufficient strength in the sleeve to support the strain that may come upon it at any point.

It is essential to use a through-pin, *s*, for connecting the pitman-rod to the sleeve, as this pin has to bear much strain. By using a pin that passes entirely through the enlarged part of the sleeve I am enabled to make the pin of wrought-metal, and very firmly secure it in place. If two small cast pivots or even wrought pivots were used centrally over and under the bore *g* of the sleeve, they would either break off or soon become rickety. The connection at this point must be strong and durable, and hence I adopt the plan of construction designated by the letters *d m*. When the sleeve D is fitted on the wrist-pin *a* the fork *c* is made to straddle it, and the through-pin *s* is inserted, as represented in Fig. 3.

Keys may be passed through the ends of the pin *s*, or the ends may be riveted upon the prongs of the fork *c*.

By examining Fig. 2 of the drawings, it will be seen that the pivotal connection *s* allows the pitman at its inner end to move backward, as illustrated in red, in case the cutting device is deflected by the standing grain.

It will also be evident that the pitman has freedom, as usual, to turn on the wrist-pin *a* of the crank-shaft A whenever the cutting appa-

arms, with a distance piece bolted between these

Improvement in Oscillating Engines.

No. 121,355.

Patented Nov. 28, 1871.

Defts' Ex. 2.

Fig. 1.

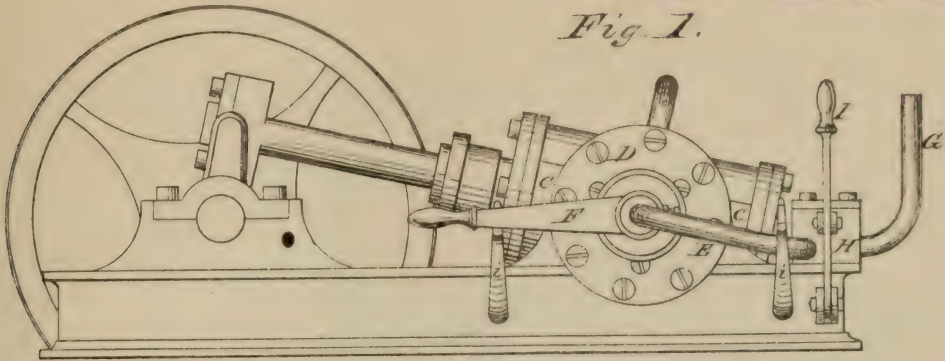


Fig. 2.

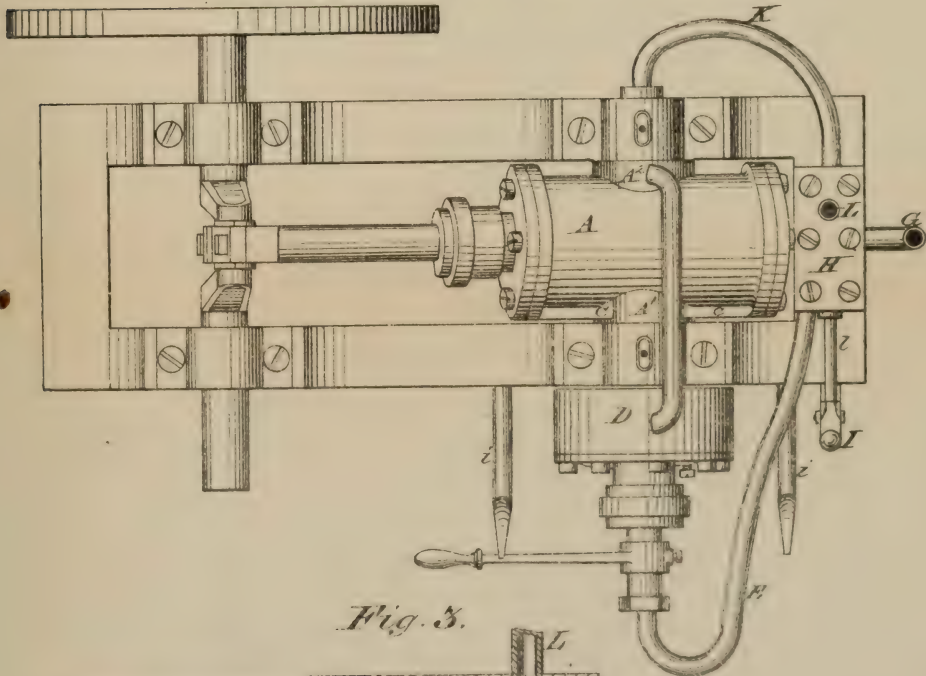


Fig. 3.

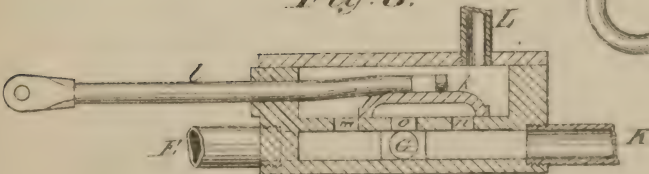
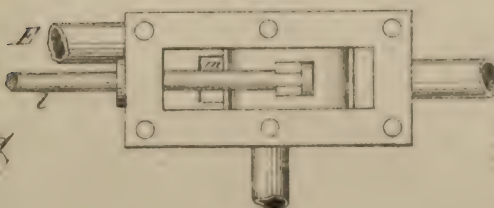


Fig. 4.



Witnesses:

C. E. Gifford
T. C. Brecht

Inventor:

Thos W. Godwin
by Jones & Co
Attorneys

upon the shaft. The arm E shown in the Simonson patent #448,592, illustrates two separate arms, with a distance piece bolted between these

Improvement in Oscillating Engines.

No. 121,355.

Patented Nov. 28, 1871.

Fig. 5.

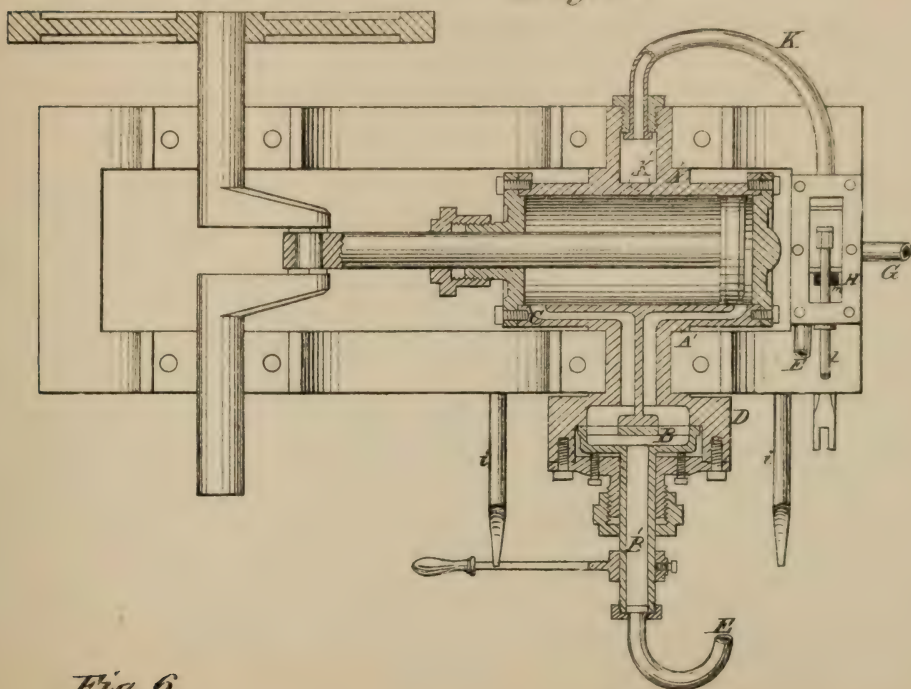


Fig. 6.

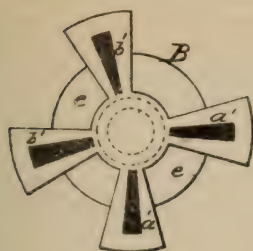


Fig. 8.

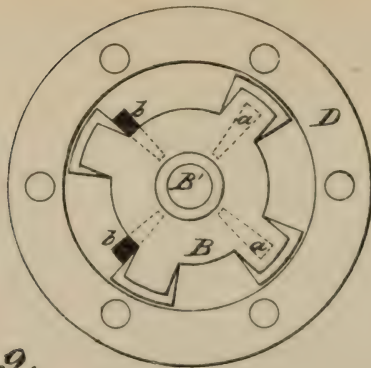


Fig. 7.

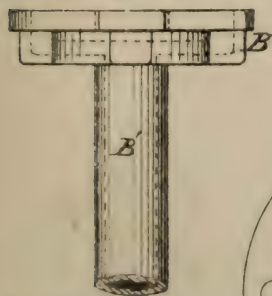
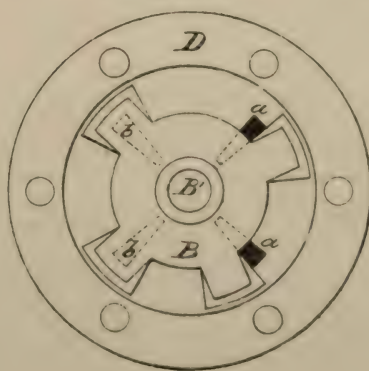


Fig. 9.



Witnesses:
C. E. Giff
T. C. Becht

Inventor:
Thos W Godwin
by Somes & Co.
His attorneys.

monson patent #440,552, illustrates two separate arms, with a distance piece bolted between these

UNITED STATES PATENT OFFICE.

THOMAS W. GODWIN, OF NORFOLK, VIRGINIA.

IMPROVEMENT IN OSCILLATING-ENGINES.

Specification forming part of Letters Patent No. 121,355, dated November 28, 1871.

To all whom it may concern:

Be it known that I, THOMAS W. GODWIN, of Norfolk, in the county of Norfolk, and in the State of Virginia, have invented a new and useful Improvement in Oscillating Steam-Engines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making a part of this specification.

My invention relates to oscillating engines; and consists in a peculiar construction and arrangement of valves in connection with the piston-cylinder, as hereinafter more fully set forth.

Figure 1 represents a side elevation of my improved engine. Fig. 2 is a plan of the same. Fig. 3 is a sectional view of the steam-chest H. Fig. 4 is a plan of the same with the cover removed. Fig. 5 is a horizontal longitudinal section. Figs. 6 and 7 are views of the valve and stem. Figs. 8 and 9 are views of the interior of the steam-chest D, showing the steam-valve with two ports open in each figure in different positions of the cylinder. Fig. 9 is a vertical section of the steam-chest D and valve B. Fig. 10 is a rear view of the valve B, the openings on the face thereof being represented by dotted lines.

The steam-cylinder A, trunnions A¹ A², and steam-chest D are cast separately or in one piece, one end of the latter forming the valve-seat, in which are four ports, *a a b b*, for the ingress and egress of steam. The trunnions are made hollow, A¹ being divided by a partition, so as to form two chambers or passages for steam, each communicating with the chamber *c*, which is formed upon and opens into either end of the steam-cylinder A. This chamber *c* also has a partition across its center opposite to and against that in the trunnions. The valve B consists of four slotted arms projecting from a hub to the inner circumference of the steam-chest. The slots *a' a' b' b'* form the openings to correspond with the ports *a a b b*. Attached to the rear of this valve is a hollow disk, *e*, provided with shorter arms which project over the slots aforesaid, and are channeled so as to conduct the steam into or from said hollow disk which opens into the hollow valve-stem B' extending through the cover of the steam-chest D, and communicating, by means of pipe E, with steam-chest H. Between the inside of the cover of the steam-chest D and the chamber *c* is a metallic washer

or ring, which is made to press the valve closely against its seat by means of set-screws, as shown in Fig. 9. The lever F attached to the stem serves to adjust the valve, and is held in position by the notches in the ends of the lugs *i i*. The arrangements within the steam-chest H are clearly shown in Figs. 3 and 4. The horizontal partition or valve-seat is provided with openings *m n o*, communicating, respectively, with pipes E, K, and G. The valve *k* is the ordinary slide-valve used in stationary engines, and has attached the arm *l* operated by the lever I. The pipe L communicates with and conducts the steam from the boiler.

The operation is as follows: The steam is admitted through the pipe L, the valve *k* being in the position shown in Fig. 3, and is conducted through the opening *m*, pipe E, and valve-stem B' into the slotted arms of the valve B, where (the cylinder and piston being in the position shown in Figs. 1 and 2) it finds the apertures *a' a'* in the arms opposite to the ports *a a* in the valve-seat, through both of which it passes, and, after traversing the right-hand passage of the trunnion and division of the chamber *c*, enters the cylinder A through the opening at the rear end of said chamber. In performing its office upon the piston the cylinder is oscillated, producing a corresponding oscillation of the valve-seat and its ports, which closes the openings *a' a'*, opens the ports *a a* into the steam-chest, and brings the ports *b b* opposite the apertures *b' b'*, through which the steam is now conducted to the forward end of the cylinder A, and, acting upon the piston, causes the exhaust steam from the opposite end to enter the steam-chest through the port *a a*. Thus at each stroke of the piston the two apertures *a' a'* of the valve open and close alternately with those marked *b' b'*, while two of the ports *a a b b* alternate with the other two in communicating with said apertures and in opening into the steam-chest. The exhaust steam is conducted from the chest D through pipe K', trunnion A², and pipe K back to steam-chest H, passing up through opening *n*, under valve *k*, down through opening *o*, and out through exhaust-pipe G. The engine may be reversed by changing the lever F from one lug to the other, or by taking hold of the lever I and drawing the rod *b*, which moves the valve *k*, whereby the opening *n* is uncovered, permitting the

monson patent #448,592, illustrates two separate arms, with a distance piece bolted between these

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steam to pass directly into the pipe K, through trunnion A² and pipe K' to steam-chest D. The projecting arms of the valve B being, as before stated, so arranged that the apertures in two of them are opposite two of the ports while the other two face the solid surface of the seat, the latter in this case permit the two open ports to take steam for one end of the cylinder A, while the other two conduct the exhaust steam from the opposite end. It then passes through the valve-stem B' and pipe E into the lower division of box H, up through opening *m*, under the valve *k*, and out as before through opening *o* and exhaust-pipe G.

I claim as my invention—

1. The valve B and oscillating seat, herein described, in combination with the steam-chest D, substantially as set forth.

2. The oscillating valve-seat and valve, constructed as described and shown, in combination with the steam-chests D and H with intervening steam-pipes E K K'.

3. A stationary steam-valve with projecting hollow arms at irregular distances, for the purpose of conducting steam to the piston-cylinder or exhausting it therefrom, substantially as described.

4. The arrangement of the hollow valve-stem B', hollow trunnions A¹ A², steam-chest D, and valve B having hollow arms, all constructed and operating substantially as shown and set forth.

THOS. W. GODWIN.

Witnesses:

D. E. SOMES,

F. C. SOMES.

(150)

to the extent only, that it has a divided bearing upon the shaft. The arm E shown in the Simonson patent #448,592, illustrates two separate arms, with a distance piece bolted between these

(Deposition of Charles E. Cleveland.)

two arms. The above-mentioned arms are perfectly straight, from the shaft upward, whereas, the arm shown in the Cleveland patent in suit, and marked 39, is an integral casting, having a fork lower end for attaching to the shaft.

I understand the definition of bifurcate is to divide in two directions. The arm E referred to in the Simonson patent last named as before stated is simply two arms extending in the same direction to the shaft. I claim that my hook-arm is stronger, not only because it is attached to the shaft by two bearings, but also the fact that these two bearings extend upward and diverge into a central arm, all forming an integral part of the arm. It is not a mere question of the weight of metal. The design has everything to do with the strength or a casting or similar parts, for instance a board is much stronger placed on edge or will sustain a greater weight, than if the board is laid flat and the weight applied. Therefore in designing this arm in question I place the member with a greater distance crossways the shaft, and which would be stronger than for instance a square arm containing the same amount of metal. I do not wish to be understood as stating that an arm would be strengthened by cutting out a portion of it at its bearing end to effect a bifurcation. Design has everything to do with the strength of materials. The mere taking, for instance of a square bar, and slotting one end of it without an equal distribution

(Deposition of Charles E. Cleveland.)

of the metal, would weaken it as a whole, and for the purpose intended.

Witness here shown photograph marked Defendant's Deposition Exhibit "B," and being the identical photograph in the record marked Defendant's Interrogatory Exhibit "A."

I judge from an inspection of this photograph that it is some sort of an arrangement for pushing logs on the carriage. I do not remember ever having seen a similar outfit in all these details. I have seen the old Simonson turner with the piston attached to a straight arm with a solid boss in which the shaft passed thru, but the arm that I saw and above referred to in my last answer was not attached to a straight bed-plate as shown in the photograph. Prior to my invention of the subject matter of the patent in suit I had seen the combination of a bed-plate provided at its outer end with a shaft-bearing; a shaft extending through said bearing; and an arm in operative relation with the shaft; a power cylinder pivotally mounted upon the bed-plate; and a piston rod working in the cylinder and connected at its outer end to the adjacent end of the arm, but had never such a combination in which the bed-plate was a straight bed-plate. I would regard the combination shown in this photograph—referring to Defendant's Interrogatory Exhibit "A"—as materially different from the subject matter defined in claim 12 in suit, because the bed-plate shown in this photograph has two arms extended out towards the carriage

(Deposition of Charles E. Cleveland.)

and provided with two bearings for the same, with the arm placed between the bearings, which anyone skilled in the arm would readily comprehend, is not as strong as that shown in my patent in suit.

Q. In your opinion is there any advantage in a bifurcated arm straddling a single bearing on a straight bed-plate, over a bifurcated bed-plate having two bearings upon opposite sides of an intermediate arm, other features of the construction being equal?

A. I think a bifurcated arm much stronger, because, no machine is stronger than its weakest part, and the bed-plate shown in this photograph has two members extending out from the cylinder bearing the ends of which each contain a bearing for the shaft. Now then, there is more chance for defects in the two members than there would be in one. I mean by that, casting defects. Furthermore, if one of the bearings on these members wears more than the other, and it is highly probable that they would not each wear alike, it would throw the strain on only one member, thereby springing the shaft and probably breaking that arm of the bed-plate. With a bifurcated arm, and one bearing on a straight line bed-plate, no matter how much wear or looseness there might be in this bearing the strains upon the arm and bed-plate would always be equalized. I think there would be a probability of strain of the shaft of transversed dimension such as are used in the log turners on the West coast. I think they can spring anything on the

(Deposition of Charles E. Cleveland.)

Pacific Coast. It is a big country, and big timber, but even if there should be no springs in this shaft, if one bearing wore more than the other, all of the strain would be thrown upon a single bearing, or a single member of the bed-plate. Any unequal wear upon any one bearing of the plurality of bearings which carry the shaft would occasion longitudinal disalignment of the shaft axis.

Witness handed a copy of patent number 992,212 issued May 16, 1911, to William H. Kratsch.

I do not recollect even having seen this particular machine. I never saw a hook-arm which carries the hook F as embodied in Fig. 1 of this machine.

Examination closed.

Respectfully submitted,

T. J. GEISLER,

Attorney for Plaintiff.

Approved March 27th, 1924.

Bean

_____,
Judge.

It is hereby stipulated that the foregoing statement may be approved.

March 27, 1924.

MacCORMAC SNOW,

Of Attorneys for Defendant.

T. J. GEISLER,

Attorney for Plaintiff.

(Title.)

MEMORANDUM OPINION OF THE DISTRICT
COURT.

Portland, Oregon, December 31, 1923.

Memorandum by BEAN, District Judge:

The use of a push-arm in a log-turning device, bifurcated and straddling the bearing formed upon the outer end of the bed-plate is not sufficient, in my opinion, in view of the prior art, to constitute invention and subject to patent.

Push-arms in log-turning devices were old in the art at the time of the Cleveland patent, as shown by the Simonson patents and other evidence. It is true they were straight with a single bearing on the shaft, or two such arms with a distance plate bolted between them. They were, however, for the same purpose, operated and functioned in the same way, and produced the same result as in the Cleveland patent, and in my judgment it was not invention for Cleveland to use an arm divided or forked at the lower end. It did not involve invention or patentable novelty since there is no substantial change in function, operation or result.

(Gilchrist vs. Mallory, 381 Fed. 350, and
authorities there cited.)

Decree for defendant.

(Title.)

DECREE.

This cause came on to be heard at this term, and was argued by counsel; and the cause having been considered by the Court and an opinion filed therein on the 31st day of December, 1923, it is hereby ORDERED, ADJUDGED AND DECREED as follows, viz.:

That the patent, No. 933,231, dated September 7, 1909, issued to Charles E. Cleveland and by him assigned to plaintiff, is void as to the claim sued on, namely, the twelfth claim.

It is further ORDERED, ADJUDGED AND DECREED that the bill of complaint herein be and the same is hereby dismissed, and that the defendants do have and recover their costs and disbursements in this suit to be taxed by the Clerk in the sum of — Dollars.

R. S. BEAN,
Judge.

Dated January 3d, 1924.

(Title.)

PETITION ON APPEAL.

The above-named plaintiff, D. J. Murray Manufacturing Company, a corporation, conceiving itself aggrieved by the decree entered in the above-entitled cause under date of January 3, 1924, whereby this Court did adjudge and decree that claim 12

of the letters patent of the United States granted to Charles E. Cleveland, September 7, 1909, No. 933,231, for an improvement in log-handling mechanism and assigned to the plaintiff herein, did not involve invention, and that said claim is void; said decree furthermore dismissing the bill of complaint herein with costs to the defendant.

THEREFORE, the plaintiff does hereby appeal from said decree and each and every part thereof, for the reasons set forth in the assignment of errors filed herewith, to the United States Circuit Court of Appeals for the Ninth Circuit, and prays that this appeal may be allowed and that a transcript of the record and proceedings, upon which said decree was made, duly authenticated, may be sent to said Court of Appeals, together with the exhibits in this case.

Dated March 4, 1924.

T. J. GEISLER,
Attorney for Plaintiff.

(Title.)

ASSIGNMENT OF ERRORS.

Now on this 4th day of March, 1924, comes the above-named plaintiff, D. J. Murray Manufacturing Company, a corporation, by its solicitor and counsel, T. J. Geisler, and says that the decree entered in the above-entitled cause on the 3d day of January, 1924, is erroneous and unjust to plaintiff:

I.

Because the District Court adjudged and decreed

that the improvement described and claimed in claim twelve in the letters patent of the United States granted to Charles E. Cleveland, September 7, 1909, No. 933,231, for an improvement in Log Handling Mechanism, assigned to plaintiff and sued on herein, did not involve invention and that said claim is void.

II.

Because the District Court failed and refused to adjudge and decree that said Charles E. Cleveland invented a new, useful and patentable improvement in Log Turning Mechanism duly defined and claimed in said twelfth claim of said letters patent.

III.

Because the District Court erred in not adjudging and decreeing that said claim of said letters patent is valid, that the defendant infringed the same, and that the plaintiff as the assignee of said letters patent is entitled to relief from such infringement as prayed for in the bill herein.

IV.

Because the said decree of the District Court is in prejudice of the substantial rights and equities of the plaintiff in the premises.

Dated March 4, 1924.

T. J. GEISLER,
Attorney and Counsel for Plaintiff.

(Title.)

ORDER ALLOWING APPEAL.

On motion of counsel for the above-named plaintiff, it is

ORDERED that an appeal be and hereby is allowed to the United States Circuit Court of Appeals for the Ninth Circuit, from the final decree entered in the above-entitled cause on or about the 3d day of January, 1924, dismissing the bill of complaint and it is ordered that a transcript of the record and proceedings upon which said decree was made duly authenticated and the physical exhibits submitted in said cause be sent to said Circuit Court of Appeals.

IT IS FURTHER ORDERED that the complainant file a bond to be approved by this Court in the sum of Five Hundred Dollars, to answer all costs on the appeal which may be adjudged or awarded against plaintiff if it shall fail to prosecute its appeal to effect and shall fail to make good its appeal.

Dated March 4, 1924.

R. S. BEAN,
District Judge.

(Title.)

BOND ON APPEAL.

KNOW ALL MEN BY THESE PRESENTS, that we, D. J. Murray Manufacturing Company, a corporation, having its principal office and place of

172 *D. J. Murray Manufacturing Company*

business in Wausau, Wisconsin, as principal, and Hartford Accident and Indemnity Company of Hartford, Conn., surety, are hereby held and firmly bound unto the above-named defendants in the sum of Five Hundred Dollars to be paid to the defendants or its legal representatives and for the payment of which we bind ourselves jointly and severally, firmly by these presents.

Sealed with our seals and dated this 4th day of March, 1924.

WHEREAS, the above-named plaintiff, D. J. Murray Manufacturing Company, a corporation, has appealed to the United States Circuit Court of Appeals for the Ninth Circuit, from the decree entered in the above-entitled cause Jan. 3, 1924, dismissing the bill of complaint herein.

NOW, THEREFORE, the condition of this obligation is such that if the above-named plaintiff, D. J. Murray Manufacturing Company, shall prosecute its said appeal to effect, and answer all damages and costs awarded against it, if it fails to sustain this appeal, then this obligation shall be void, otherwise to remain in full force and virtue.

D. J. MURRAY MANUFACTURING
COMPANY,

Plaintiff.

By P. R. HINES,
Its Local Agent.

HARTFORD ACCIDENT AND INDEMNITY COMPANY,

By ST. JEWETT, (Corp. Seal)

Countersigned: WALKER, JEWETT & BARTON,

By ST. JEWETT,

Agents.

Signed, sealed and delivered in the presence of:
As to D. J. Murray Mfg. Co., By P. R. Hines, Its
Local Agent,

ARTHUR HEDEEN.

W. E. RAMSEY.

The within bond is hereby approved.

Dated Mar. 4, 1924.

R. S. BEAN,
District Judge.

Filed Mar. 4, 1924.

In the District Court of the United States, for the
District of Oregon.

No. E.-8615.

D. J. MURRAY MANUFACTURING CO., a Corporation,

Plaintiff,

vs.

SUMNER IRON WORKS and SILVERTON
LUMBER COMPANY, Corporations,
Defendants.

STIPULATION RE TRANSCRIPT OF RECORD.

G. H. Marsh, Esq., Clerk of the Above-named Court:

It is hereby stipulated that the transcript of record shall contain the following and that the praecipe heretofore filed may be disregarded and omitted.

In making up the transcript of appeal now pending in this cause to the United States Circuit Court of Appeals for the Ninth Circuit, please incorporate the following portions of the record:

1. The bill of complaint, omitting verification.
2. The answer, omitting verification.
3. The interrogatories propounded by the respective parties and the answers thereto, as contained in the condensed statement thereof filed by plaintiff.
- 3½. Stipulation dated Nov. 7, 1923, filed Nov. 10, 1923.
4. The condensed statement of the evidence as approved by the Court.
5. The opinion of the Trial Court.
6. The interlocutory decree entered January 3, 1924.
7. The petition for, and order allowing appeal.
8. The bond on appeal.
9. The assignment of errors.
10. The citation on appeal.
11. Copies of drawings and specifications of Patents Numbered 48,658; 121,355; 134,117; 309,103; 382,760; 408,760; 448,588; 448,590; 448,591;

448,592; 448,593; 483,014; 531,861; 559,192; 623,002; 694,459; 759,857; 852,231; 875,297; 905,721; 992,212, constituting Defendant's Exhibits 1 to 20 inclusive; also U. S. Patent No. 778,522, constituting Plaintiff's Exhibit 13; also photographic reproductions of the physical exhibits identified as Plaintiff's Exhibits 16 and 17; also photographic reproductions of Defendant's Interrogatory Exhibits "A" and "B," the former being identical with Defendant's deposition, Exhibit "B"; also photographic reproduction of the model constituting Plaintiff's Exhibit 10.

And an order may be entered by the Court directing that all the original exhibits used on the trial of this cause be sent to the said Circuit Court of Appeals for its use.

Dated March 27, 1924.

T. J. GEISLER,
Attorney for Plaintiff.
MacCORMAC SNOW,
Of Attorneys for Defendants.

In the District Court of the United States, for the
District of Oregon.

D. J. MURRAY MANUFACTURING CO., a Corporation,

Plaintiff,

vs.

SUMNER IRON WORKS and SILVERTON
LUMBER COMPANY, Corporations,
Defendants.

STIPULATION BY PARTIES AS TO TRAN-
SCRIPT.

It is hereby stipulated on behalf of the above-named parties that the foregoing is a true and complete transcript of record on appeal in this court, and that the Clerk of the U. S. District Court for the District of Oregon, may certify the same as such transcript without comparison thereof with the original record.

Dated Mar. 27, 1924.

T. J. GEISLER,
Counsel for Plaintiff.
MacCORMAC SNOW,
Of Counsel for Defendants.

(Title.)

CERTIFICATE OF CLERK U. S. DISTRICT
COURT TO TRANSCRIPT OF RECORD.

United States of America,
District of Oregon,—ss.

I, G. H. Marsh, Clerk of the District Court of the United States for the District of Oregon, do hereby certify that the foregoing is a true and complete transcript of record on appeal, and all proceedings had in said cause in said court in the case in which D. J. Murray Manufacturing Company, a corporation, is plaintiff and appellant, and Sumner Iron Works and Silverton Lumber Company are defendants and appellees. This certificate

is made pursuant to the stipulation of the parties filed in said cause, without comparison of the transcript with the original record.

In Testimony Whereof, I have hereunto set my hand and affixed the seal of said court at Portland, in said District, this 28th day of March, 1924.

[Seal]

G. H. MARSH,

Clerk.

[Endorsed]: No. 4231. United States Circuit Court of Appeals for the Ninth Circuit. D. J. Murray Manufacturing Company, a Corporation, Appellant, vs. Sumner Iron Works, a Corporation, and Silverton Lumber Company, a Corporation, Appellees. Transcript of Record. Upon Appeal from the United States District Court for the District of Oregon.

Filed March 31, 1924.

F. D. MONCKTON,

Clerk of the United States Circuit Court of Appeals for the Ninth Circuit.

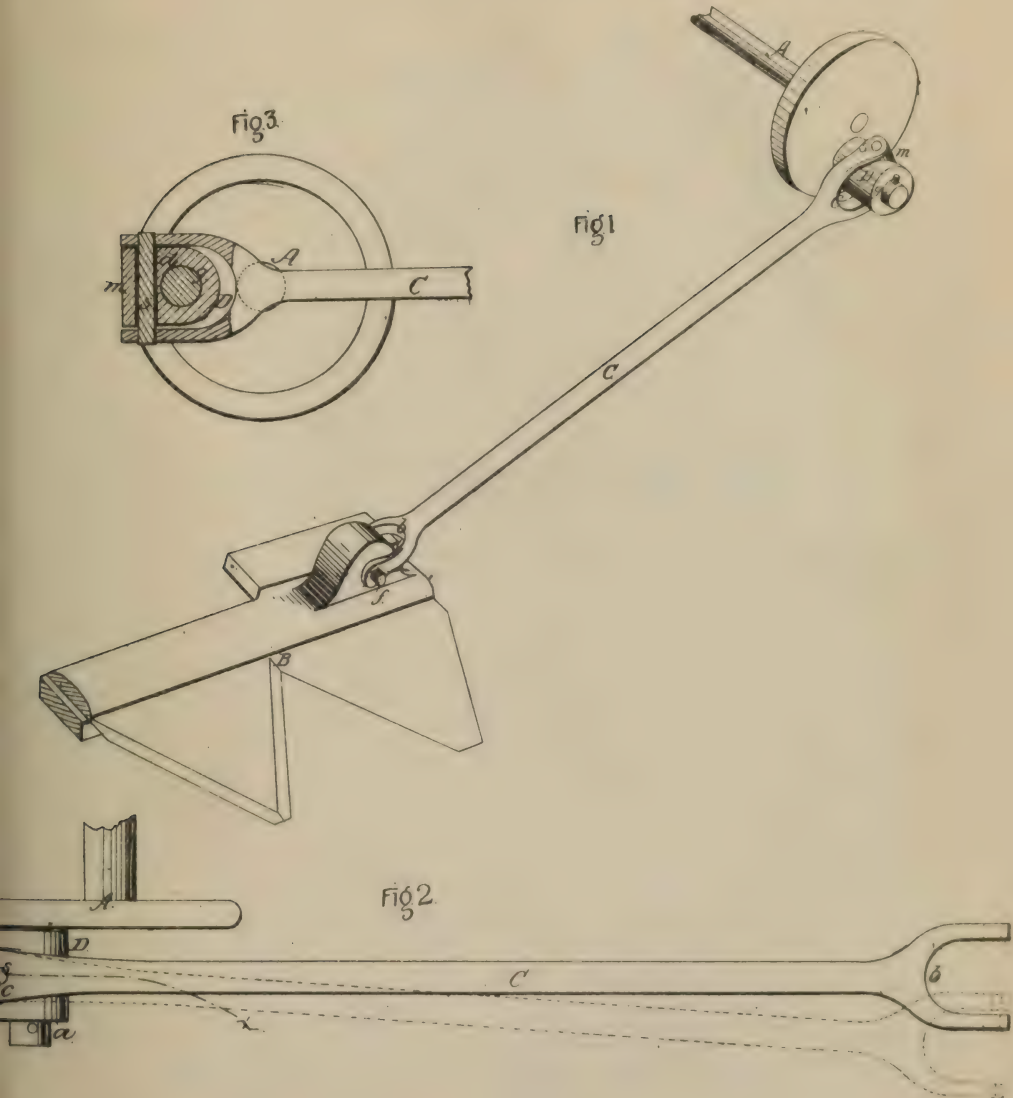
By Paul P. O'Brien,

Deputy Clerk.

I. H. Collier.
Harvester Pitman.

N^o 48,658.

Patented Jul. 11, 1865.



Witnesses:

R. P. Campbell,
Charles Hayes

Inventor:

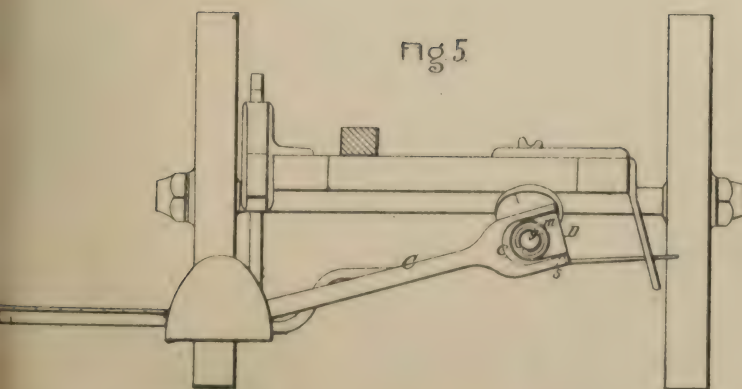
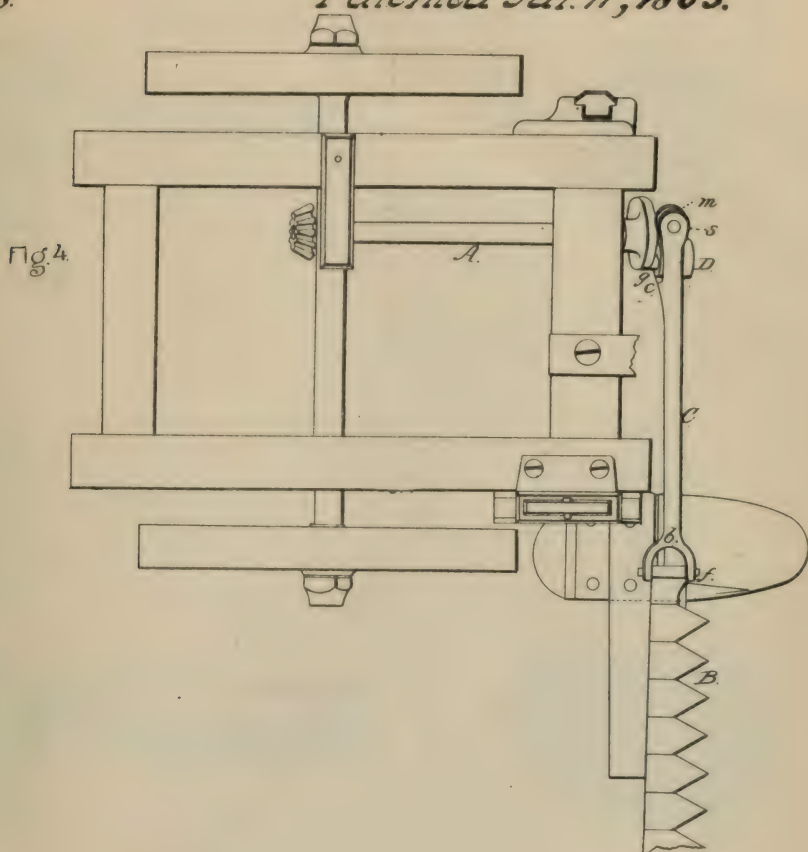
Isaac H. Collier
by his Attys
Maun. Kenwick Lawrence

I. H. Collet.

Harvester Pitman

^r_n 48,658.

Patented Jul. 11, 1865.



56 es

Index
Campbell

Inventor:

Hand A Colles
by the father

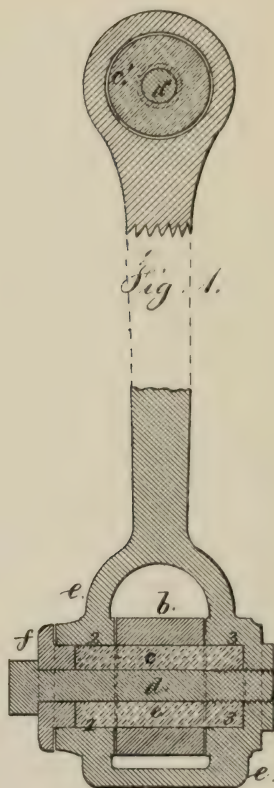
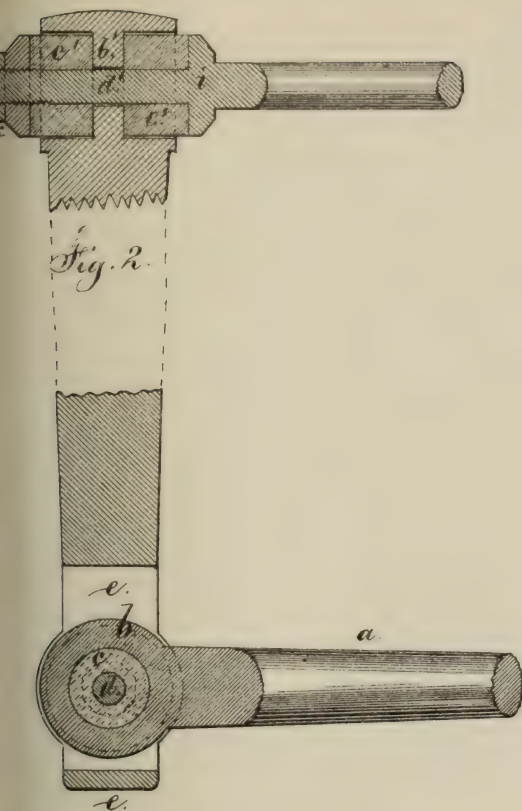
by the Father

Mrs. J. S. L. L.

Pitman.

No. 134,117.

Patented Dec. 17, 1872.



messes,

Chas. N. Smith
Harold Serrell

Inventor

Seth Wheeler

Lemuel W. Serrell atty.

SETH WHEELER, OF ALBANY, NEW YORK.

IMPROVEMENT IN PITMEN.

Specification forming part of Letters Patent No. 134,117, dated December 17, 1872.

To all whom it may concern:

Be it known that I, SETH WHEELER, of Albany, in the State of New York, have invented an Improvement in Joints or Connections for Oscillating and Reciprocating Mechanical Movements; and the following is declared to be a correct description thereof.

In sieves for winnowing-machines, separators for thrashing-machines, cutter-bars of harvesting-machines, jig-saws, and numerous other articles there is a rapid reciprocation, and the inertia of the article moved has to be overcome and the article started in the other direction. This tends to wear the joints loose of the connecting-rods, oscillating levers, or other actuating parts, and produces a violent thumping noise that is very objectionable, and the parts are rapidly impaired. Besides this, the joints in machinery of this character are often numerous and difficult to oil, and hence they frequently become heated, and there is friction, wear, and loss of power.

My invention is made for the purpose of dispensing with lubrication at the joints, for preventing looseness and wear, for increasing the motion by the inertia, and by consequence lessening the length of crank or other motor, and saving loss of power both by friction and in overcoming the inertia of the reciprocating or oscillating body, because the inertia is availed of to aid in moving the body in the opposite direction. My invention consists in a spring around the joint pin or connection of the rod or lever in an oscillating or reciprocating mechanical movement, said spring being compressed into contact with the surface of the pin and the eye surrounding the same, so that the turning motion of the joint will not be a movement of one surface upon another, but it will be torsion of the spring itself, between the inner and the outer bearing-surfaces thereof; hence this device is not adapted to the surface of a crank-pin or any joint exposed to a rotary motion, but only to such joints as have a slight turning or vibrating motion that can be allowed of in the spring itself, and the alternations of direction cause the bolt of the joint to compress the spring at first one side and then the other, throwing the greater portion of the spring to first one side and then the other, and forming an elastic cushion to the bolt and eye of the joint that necessarily overcomes the inertia of the body that is moved, and allows of a greater movement of that body than would result from rigid joints; thereby in winnowers,

harvesters, separators, &c., the throw of the crank can be lessened without decreasing the movement of the reciprocating part, the noise from concussion will be stopped and the expenditure of power materially lessened, besides avoiding the use of lubricating material, and rendering the parts much more durable.

In the drawing, Figure 1 is a section of the joint pins or bolts, arms, and springs; and Fig. 2 is a section at right angles to the same.

The rod or lever *a* is made with an eye, *b*, of a size to surround the rubber spring *c*, through which the joint-pin *d* passes for the purposes aforesaid, and the jaw *e* of the other part of the joint is made with a hole through which the spring *c* is passed, as at 2, and a recess, 3, for the end of the tube *c* to enter. A cap, *f*, through which the joint-pin or bolt *d* passes, serves to confine the rubber spring and expand the same sufficiently to fill the eyes and cause the spring to adhere sufficiently to the interior of the eyes and the exterior of the pin to prevent there being a motion between the metal and the surface of the rubber tending to wear the latter, and to insure the twisting or torsion of the spring itself by the turning movement of the parts as aforesaid, and the inertia of the article moved will cause a compression of the rubber in the before-described manner and effecting the objects named.

The India-rubber spring might be replaced by a wire helix having a corresponding action.

Where the reciprocation is in a different direction, I make the spring in two parts, as at *e'*, the ends being confined against the central division *b'*, and the joint-pin *d'* having the shoulder *i*, cap and nut *f'* to regulate the pressure upon the springs. In this construction the rod or joint-pin *d'* is free to play slightly endwise, or to turn partially around, or to vibrate laterally, because the springs *e'* are not confined by the portion of the eye that surrounds them; but there will not be any sliding of one surface upon the other, the motion being allowed for by the springs.

I claim as my invention—

The jaw *e*, with an eye, 2, and socket 3 for the rubber tube *c*, in combination with the clamping-washer or cap *f*, pin *d* and eye *b*, or their equivalents, substantially as set forth.

Signed by me this 26th day of April, A. D. 1872.

Witnesses:

SETH WHEELER.

STAATS WINNE,

JAMES C. WENDREM.

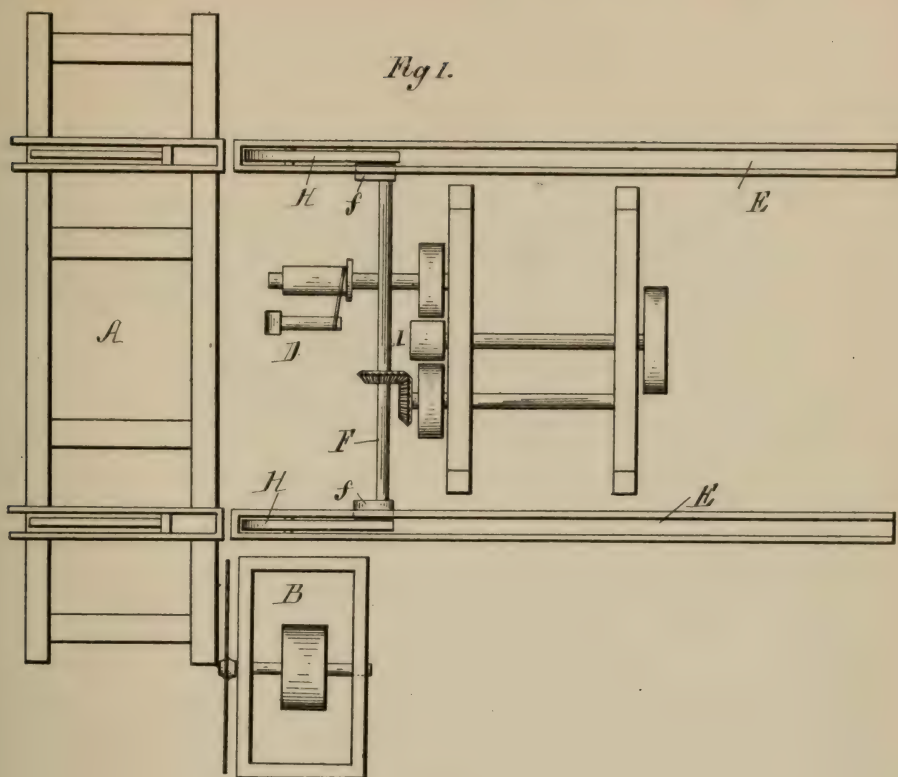
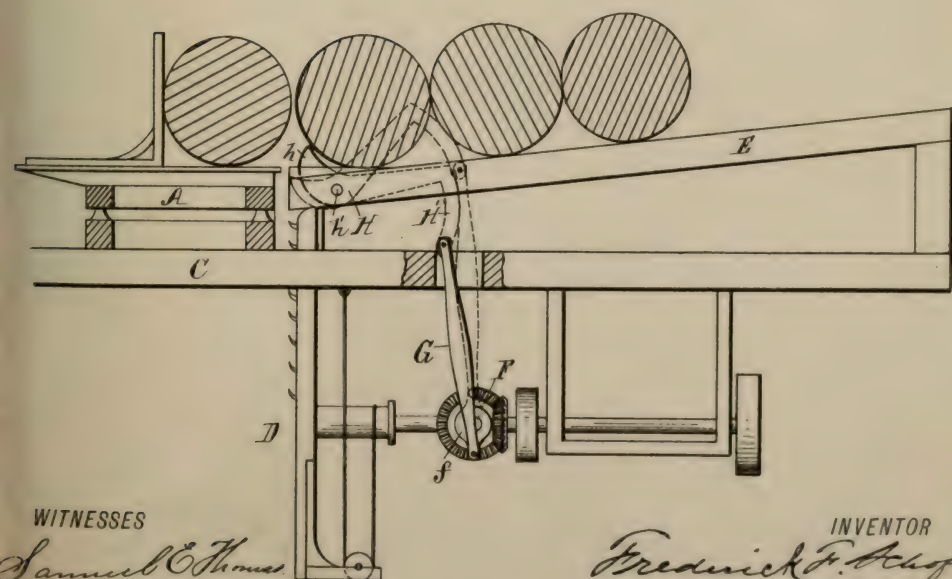


F. F. SCHOFIELD.

LOG LOADER.

No. 309,103.

Patented Dec. 9, 1884.

*Fig 2.*

WITNESSES

Samuel C. Thomas
N. S. Wright

INVENTOR

Fredrick F. Schofield
By W. C. Fennell
Attorney

It is hereby certified that the residence of the patentee of Letters Patent No. 309,103, granted December 9, 1884, upon the application of Frederick F. Schofield, for an improvement in "Log-Loaders," was erroneously written and printed "Ascoda;" that said residence should have been written and printed *Oscoda*; and that the proper corrections have been made in the files and records pertaining to the case in the Patent Office, and should be read in the Letters Patent to make it conform thereto.

Signed, countersigned, and sealed this 23d day of December, A. D. 1884.

[SEAL.]

M. L. JOSLYN,
Acting Secretary of the Interior.

Countersigned:

BENJ. BUTTERWORTH,
Commissioner of Patents.

FREDERICK F. SCHOFIELD, OF ASCODA, MICHIGAN.

LOG-LOADER.

SPECIFICATION forming part of Letters Patent No. 309,103 dated December 9, 1884.

Application filed May 20, 1883. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK F. SCHOFIELD, of Ascoda, county of Iosco, State of Michigan, have invented a new and useful Improvement in Log-Loaders; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form a part of this specification.

My invention consists in the combinations of devices and appliances hereinafter specified, and more particularly pointed out in the claims.

In the drawings, Figure 1 is a plan view of an apparatus embodying my invention. Fig. 2 is a side elevation. Fig. 3 is an end elevation of a portion of the same. Fig. 4 is a separate view of one of the parts.

The object of my invention is to provide an improved log-loader, adapted to load logs onto a carriage commonly employed in saw-mills, which shall be capable of ready and easy operation.

I accomplish my object as follows:

As illustrated in the drawings, A represents the ordinary carriage.

B represents the frame in which the circular saw is engaged.

C represents the floor.

D represents the "nigger."

E is the skidway of my improved loader.

F is an operating shaft or roller beneath the floor, said shaft or roller adapted to be driven by friction or other means.

f represents a crank or eccentric at the ends of the operating shaft.

G represents connecting-bars secured to said cranks or eccentrics at their lower extremities.

H represents a cant lever or bar of suitable form, preferably constructed as shown in Fig. 4, having a toe-piece, h, and an angular arm, H', the extremity of said arm being hinged or pivoted to the upper extremity of the connecting-rod. The cant lever is pivoted in the skidway, as shown at h', in such a manner that the toe of the lever may be tilted downward upon or below the level of the surface of the skidway, in which position the angular arm

will be projected above the surface of the skidway, as shown in dotted lines in Fig. 2.

It is evident that when the toe of the lever projects and the angular arm is depressed to the level of the surface of the skidway the toe-pieces will hold the log in place; but when the operating shaft or roller is rotated, so that the toe is depressed and the angular arm elevated, the log resting upon the cant-lever and held in place by the toe-pieces will be projected downward upon the circular carriage. The length of the cant-lever is such that as one log is projected forward off the skidway the angular arm will be projected between it and the following log in such a manner that but one log will be loaded upon the carriage at a time. The continued rotation of the operating-shaft will again depress the angular arm and elevate the toe of the cant-lever, thus letting the log forward upon the face of the cant-levers, where it will again be held in place by the elevated toes.

The skidway is preferably constructed of two timbers on each side, so that the cant-lever can be pivoted between them, though said levers may be pivoted to the skidway in any suitable manner.

The friction of the roller I, by which the operating-shaft is rotated, may be controlled in any proper manner—as, for instance, by the lever I'—and said friction-roller may also operate the nigger in any ordinary manner.

What I claim is—

1. In device for rolling logs from a skid to a saw-carriage, a series of rocking arms mounted on a transverse shaft connected to said skid, in combination with a pulley rotatable at will, and a rod connecting the pulley to at least one of said rocking arms, substantially as set forth.

2. The combination, with the skidways E and log-carriage A, of the cant-levers H, pivoted to rock in a vertical plane, and each constructed at one end with the toe-piece h, and at the other end with a depending angle-arm, H', the rods G, pivoted at one end to the said angle arms, and the shaft F, having crank-arms f pivoted to the lower ends of the rods, substantially as described.

3. The combination, with the skidways E and log-carriage A, of the cant-levers H, di-

rectly pivoted on the skidways, and each having at one end the toe-piece *h*, and at the other end the depending angle-arm *H'*, the rods *G*, pivoted at one end to the depending angle-arms, and the shaft *F*, having crank-arms *f* pivoted to the other end of the said rods, substantially as described.

10 4. The combination, with the skidway *E* and log-carriage *A*, of the cant-levers *H*, pivoted directly to the skidway on independent

pivots, and each provided with a toe-piece, *h*, and a depending angle-arm, *H'*, and devices connected with said levers to rock them in a vertical plane, substantially as described.

In testimony whereof I sign this specification 15
in the presence of two witnesses.

FREDERICK F. SCHOFIELD.

Witnesses:

N. S. WRIGHT,

SAMUEL E. THOMAS.

(No Model.)

J. B. ERWIN.
AIR COMPRESSOR.

192

No. 382,760.

Patented May 15, 1888.

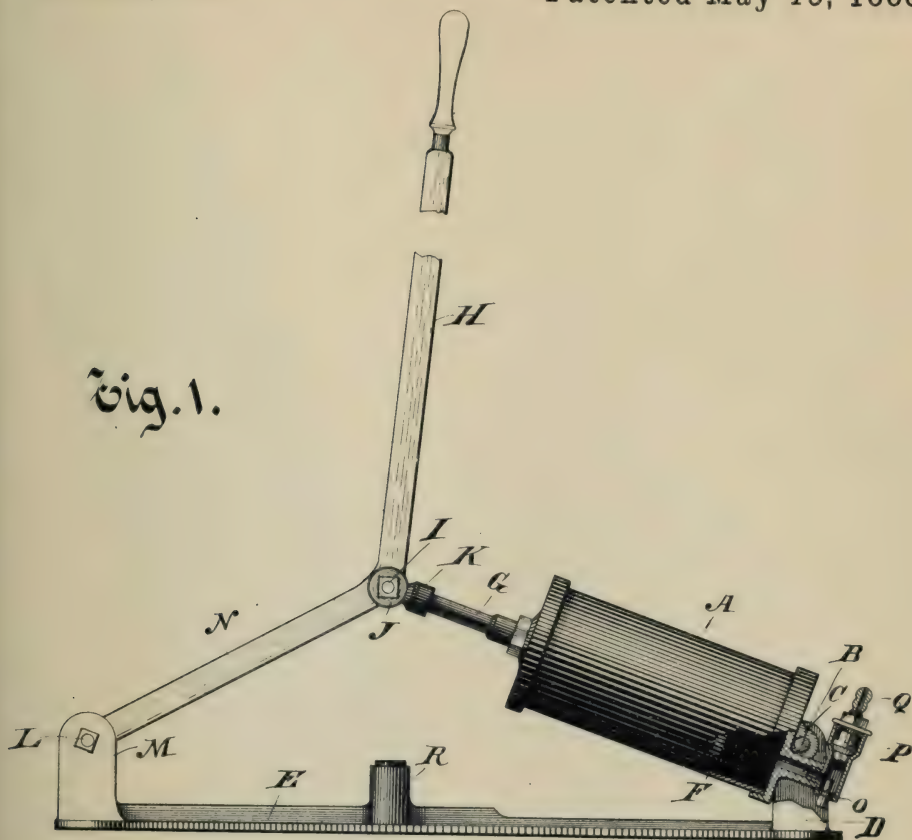


Fig. 1.

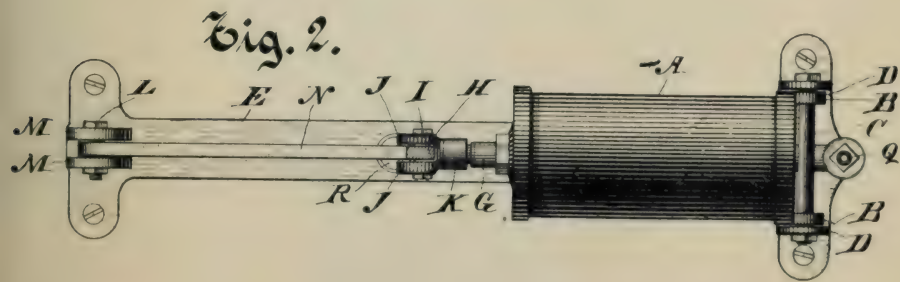


Fig. 2.

Witnesses.

C. N. K. & Co. Secy.
Rena Faust.

Inventor,
James B. Erwin

UNITED STATES PATENT OFFICE.

JAMES B. ERWIN, OF MILWAUKEE, WISCONSIN.

AIR-COMPRESSOR.

SPECIFICATION forming part of Letters Patent No. 382,760, dated May 15, 1888.

Application filed November 1, 1887. Serial No. 253,977. (No model.)

To all whom it may concern:

Be it known that I, JAMES B. ERWIN, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Air-Compressors; and I do hereby declare the following to be a full, clear, and exact description of said invention, reference being had to the accompanying drawings, and to the letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in air-compressors; and it pertains to that class in which the air compressing piston is operated by a lever.

It is a well-known fact that when forcing air into a receiver at a high pressure the first part of the downward stroke of the piston against the air is comparatively easy, and that the resistance of the compressed air to the piston gradually increases in the same ratio that the density of the air is increased, and it consequently follows that with an air-compressor of the ordinary construction the power required at the last of the stroke is much greater than that required at the first.

The object of my improvement is to provide a device by which the power of the lever is increased as the resistance of the compressed air to the piston is increased, whereby the last of the stroke of the lever is made with as great ease as the first, and the resistance to the lever is nearly uniform throughout the entire stroke.

The construction of my invention is explained by reference to the accompanying drawings, in which—

Figure 1 represents a side view of my air-compressor, part in section; and Fig. 2 represents a top view thereof.

Like parts are represented by the same reference-letters in both views.

A is an oscillating cylinder, which is pivoted at its lower end by lugs B B and pivotal bolt C to the lugs D D of the base or bracket E.

F is a piston of the ordinary construction.

G is the piston-rod. The rod G is pivoted to the operating lever H by the pivotal bolt I, which bolt I passes through the lugs J J, formed on the sleeve K. Sleeve K is affixed to the end of the piston-rod G. The lower end of the lever H is pivoted to the bracket or base E by

pivotal bolt L, passing through the upward-projecting lugs M M. The upper end of the lever H is inclined at such angle to its short arm N as is most convenient to be operated, or as may be preferred by the operator. By this arrangement it is obvious that when the lever H is moving forward during the first of the stroke from the position above the pivotal bolt L the piston F is moved forward or downward in the cylinder with a more rapid movement corresponding with the forward movement of the lever H, which movement of the piston gradually diminishes as the arm N approaches the horizontal in line with the oscillating cylinder, and at the last of the stroke the piston moves forward but slowly, and consequently the power of the operator over the resistance is increased in the same ratio that the forward movement of the piston is diminished. With the upstroke of the piston air enters the cylinder through the check-valve O, which is raised by the current of air in entering. With the return or downward stroke of the piston the check-valve O closes and the air is forced out above it through the check-valve P, and from thence through the nozzle Q to the air-receiver, with which the nozzle Q is connected by a flexible tube. The downward stroke of the lever H is arrested as the piston reaches the lower end of the cylinder A by contact with the stop R, which stop is affixed to or formed in connection with the base or bracket E. It is obvious that by thus pivoting the cylinder, piston-rod, and operating-lever, as shown, a so-called "toggle-joint lever" is formed, by which, as the short arm of the operating-lever and the piston-rod are brought in line with each other between their respective supporting-pivots at each downward movement of the piston, the piston is thereby caused to move with an accelerating and almost irresistible force at that part of its stroke where the resistance to its movement is greatest and where the greatest force is required.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an air-compressor, the combination of an oscillating cylinder pivoted at a fixed point to a supporting-bracket and provided with inlet and outlet air-controlling valves, a pis-

ton and a piston-rod, a two-armed lever pivoted at one end to the cylinder-supporting bracket, and at an intermediate point between its ends to the protruding end of said piston-rod, the pivotal point of said rod and lever being adapted with each downward stroke of the piston to be brought in line with the fixed pivotal points of said lever and cylinder, substantially as and for the purpose specified.

2. In an air compressor, the combination of the base or bracket E, provided at its respective ends with upward-projecting lugs D D and M M, and at or near its center with a stop, R, air-compressing cylinder A, provided with air-controlling valves O and P, piston F, and

piston-rod G, pivotal lugs B B, affixed to the lower end of said cylinder and pivoted to said lugs D D by pivotal bolt C, pivotal bolt C, and operating-lever H, pivoted at its lower end to said lugs M M and at an intermediate point between its ends to the protruding end of said piston-rod G, all substantially as and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES B. ERWIN.

Witnesses:

C. T. BENEDICT,

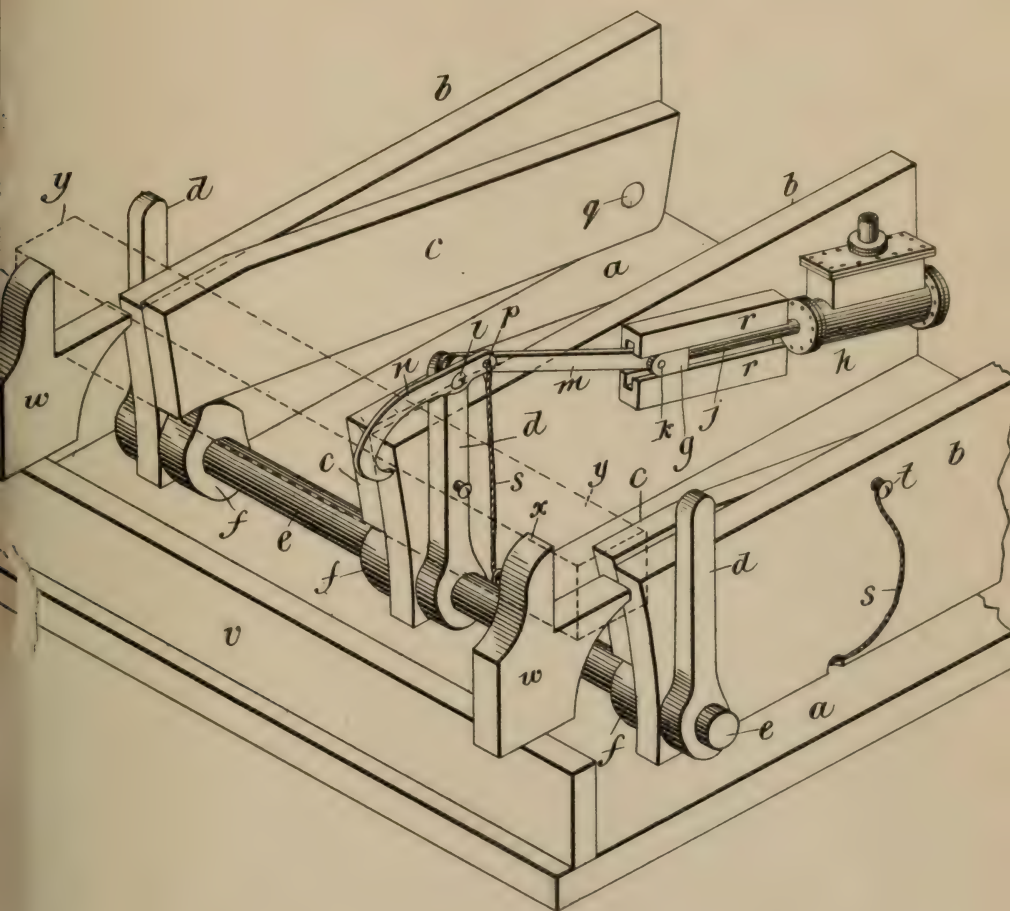
C. H. KEENEY.

Defts' Ex. 5 1/2

195

Patented Aug. 13, 1889.

408,760.



Witnesses:

James P. Gay
P. H. Peters

Inventor.

Flavel Simonson

FLAVEL SIMONSON, OF BATESVILLE, ARKANSAS.

LOG LIFTING AND TURNING MACHINE.

SPECIFICATION forming part of Letters Patent No. 408,760, dated August 13, 1889.

Application filed December 17, 1888. Serial No. 293,929. (No model.)

To all whom it may concern:

Be it known that I, FLAVEL SIMONSON, a citizen of the United States, residing at Batesville, in the county of Independence and State of Arkansas, have invented a new and useful Log-Lifting and Log-Turning Machine, of which the following is a specification.

The object of my invention is, first, to put a log onto the carriage of a saw-mill; second, to turn the log over or partly over while being sawed; third, to slide a square stick or partly square stick onto the carriage after having been turned. I attain these objects by the mechanism illustrated in the accompanying drawing, in which drawing I have shown a perspective view of my invention.

Similar letters refer to similar parts throughout the drawing.

a is the mill-floor; *b*, logways; *c*, log-lifters; *e*, shaft on which arms *d* and eccentrics *f*, that raise log-lifters *c*, are fastened; *g*, pins on which log-lifters *c* swing; *l*, pin on side of logways *b*, to which rope *s* is attached; *n*, hook to turn log *y*; *l*, bolt on which hook *n* swings, and which also receives pitman *m*; *p*, hole in hook *n* to attach rope *s*; *m*, pitman of engine *h*; *k*, pin in cross-head *g*; *r*, guides; *j*, piston-rod of engine *h*; *v*, carriage of saw-mill; *w*, head-blocks; *x*, knees of head-blocks; *y*, log.

Operation: To turn a log, apply steam to the upper end of the engine *h*, which will draw down the arm *d*, carrying the hook *n*, and the hook *n* will pull the log *y* forward until it strikes the log-lifters *c*, and the hook *n* will roll the log *y* forward onto the log-lifters *c*. Then apply steam to the lower end of the engine *h*, and the arms *d* will push the log *y* onto the head-blocks *w* and against the knees *x*. It will be noticed that when the log *y* is turned forward onto the log-lifters *c* they are raised by the eccentrics *f* above the head-blocks *w*, which admits of the log *y* being shoved back onto the head-blocks *w*. When the log *y* has been turned and shoved back, pull on the rope *s* where it is attached to pin *l* and the hook *n* will be raised so as to clear the log *y*. Then apply steam to the upper end of the engine *h*, and the arms *d* will be drawn down below the logways *b* and the hook *n* will drop by the side of its arm *d*, and this arm *d* being fastened to the shaft and the other arms being

also fastened to the shaft *e* the arms *d* are all drawn below the top of the logways *b*, and the eccentrics *f* being also fast to shaft *e* they are carried back when the shaft *e* turns, causing the log-lifters *c* to also recede by gravitation below the top of the logways *b*. When all the arms *d* and the log-lifters *c* are drawn below the logways *b*, another round log can be rolled over them to a point between where the end of the arms *d* will rise above the top of the logways *b* and head-blocks *w*. To put this round log onto the head-blocks *w*, apply steam to the lower end of the engine *h*, and the arm *d* rising will turn the shaft *e*, which will cause the eccentrics *f* to raise the log-lifters *c* above the top of the logways *b*, carrying the log *y* above the head-blocks *w*, so that the arms *d* can either push or roll the log *y* onto the head-blocks *w*. If it is desired to turn a log and the arms *d* are at rest below the top of the logways *b* and the hook *n* hanging down, first pull on the rope *s* at *l*, and the hook *n* will be raised into the air, so as to clear the log *y*. Then apply steam to the lower end of engine, and the hook *n* will be thrown over the log *y*, and the eccentrics *f* will raise the log-lifters *c*, so as to catch the log *y* as it slides forward and make it turn by the pulling of the hook *n*, as heretofore described.

What I claim, and desire to secure by Letters Patent, is—

1. In a machine for turning and lifting logs, the combination, with an engine, a rock-shaft, an arm secured to the shaft, a hook pivoted to the free end of the arm, a pitman-rod pivotally connecting the hook with the piston-rod of the engine, and guides *r*, for regulating the direction of movement of the piston-rod, substantially as and for the purpose specified.

2. The combination, in a log lifting and turning machine, of a log-lifter *c*, a rock-shaft *e*, an eccentric *f*, fastened on the shaft for raising the log-lifter, a straight arm *d* on the shaft, and the engine *h*, connected with the arm, substantially as and for the purpose specified.

FLAVEL SIMONSON.

Witnesses:

JAMES P. GAY,
P. F. TETER

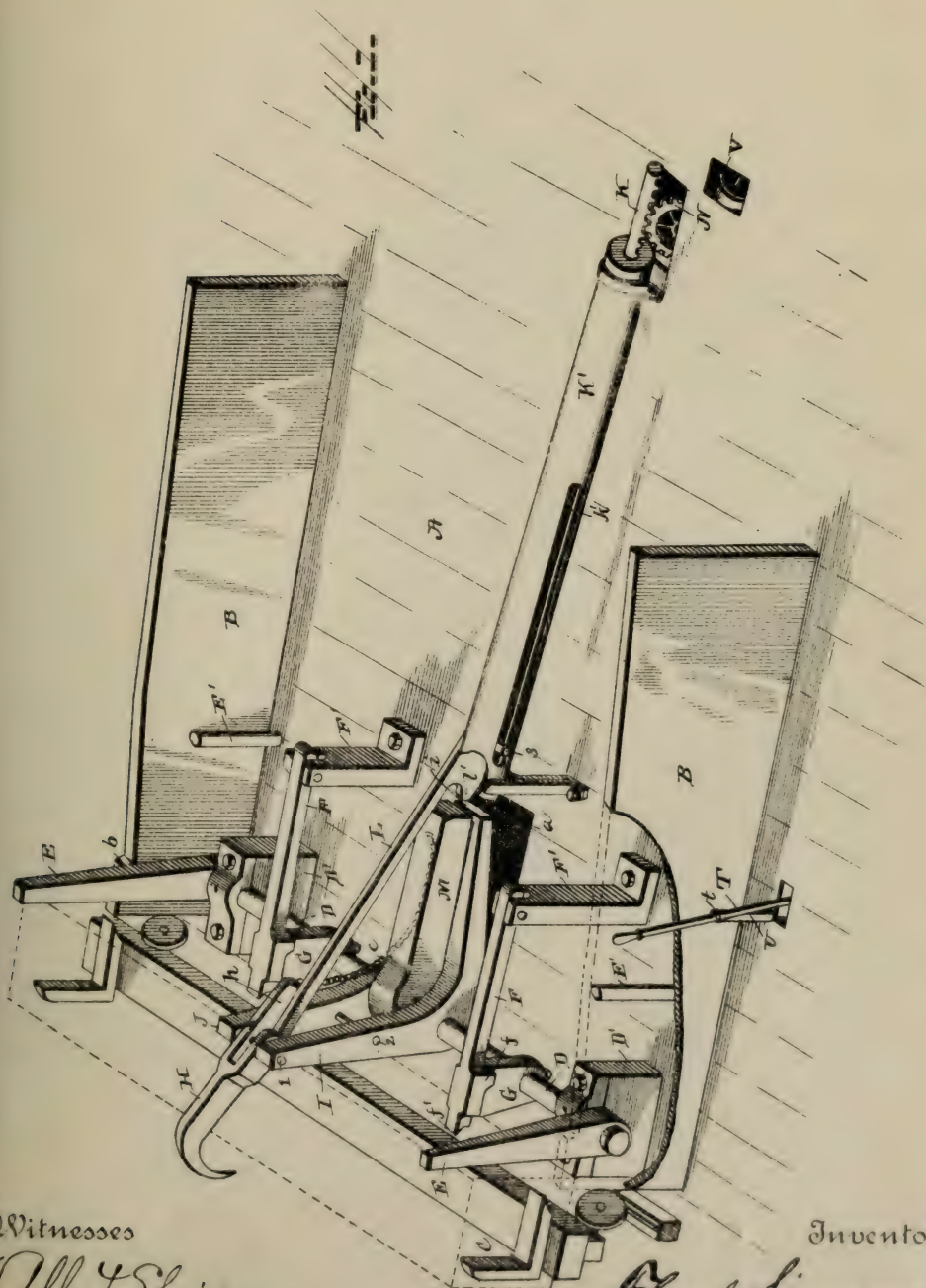
(No Model.)

197
3 Sheets—Sheet 1.

F. SIMONSON.
LOG. LIFTING AND TURNING MACHINE.

No. 448,588.

Patented Mar. 17, 1891.



Witnesses

Albert Speiden
D. H. Taylor

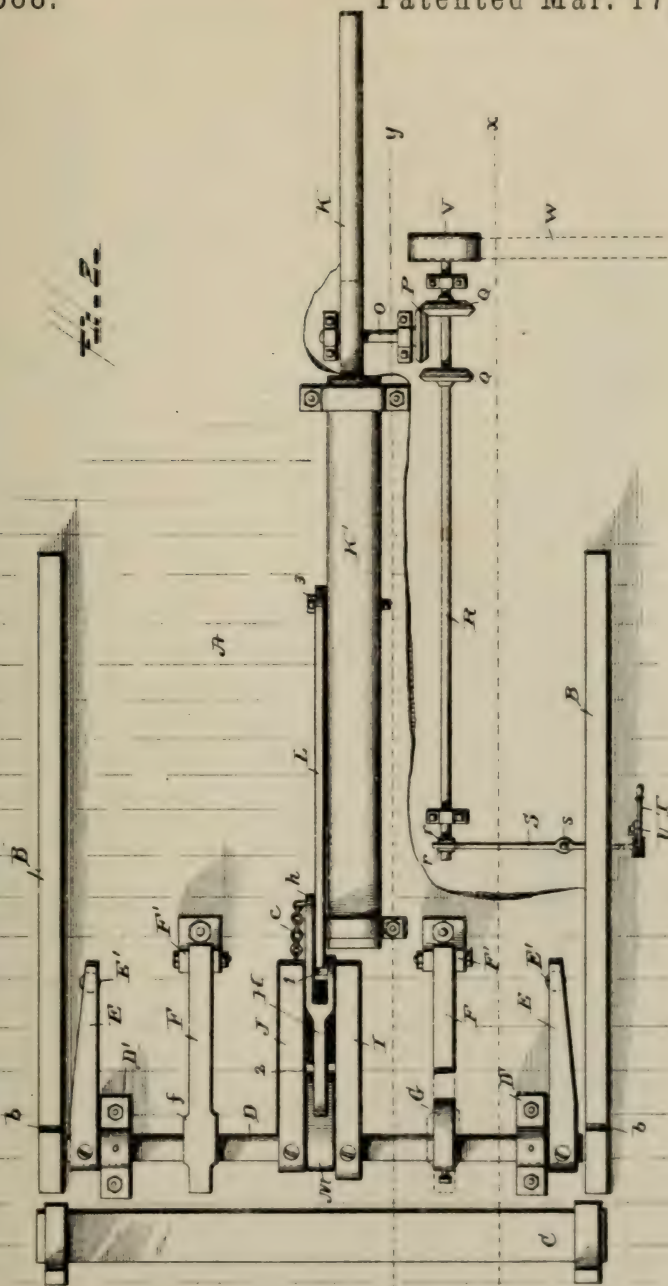
Inventor

Flavel Simonson
By his Attorney
Wm. Hunter Myers

F. SIMONSON.
LOG LIFTING AND TURNING MACHINE.

p. 448,588.

Patented Mar. 17, 1891.



nesses

Inventor

W. L. Spiden,
W. A. Taylor

By *W. L. Spiden* Attorney,
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FLAVEL SIMONSON, OF BATESVILLE, ARKANSAS, ASSIGNOR TO GEORGE H. CHAMBERLAIN, OF MILWAUKEE, WISCONSIN.

LOG LIFTING AND TURNING MACHINE.

SPECIFICATION forming part of Letters Patent No. 445,588, dated March 17, 1891.

Application filed October 16, 1889. Serial No. 327,188. (No model.)

To all whom it may concern:

Be it known that I, FLAVEL SIMONSON, a citizen of the United States of America, residing at Batesville, in the county of Independence and State of Arkansas, have invented an Improved Log Lifting and Turning Machine, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to an improved log lifting and turning machine; and it has for its object the production of a machine whereby the log may be lifted from the logways, pushed onto the saw-mill carriage, and drawn clear of the carriage in the operation of turning it, the cant-hook operating automatically to engage with the log or to pass clear of it at pleasure.

The invention will first be described in connection with the accompanying drawings, and then pointed out in the claims.

Figure 1 of the drawings is a perspective view of the machine with the parts in position for turning the log, one of the logways being partly broken away. Fig. 2 is a plan view of the machine at rest, a portion of the floor of the mill being broken away to show the mechanism that reciprocates the operating-bar. Fig. 3 is a longitudinal section of the machine at rest, taken on the line *x x* of Fig. 2. Fig. 4 is a longitudinal section of the machine in the position shown in Fig. 1, taken on the line *y y* of Fig. 2. Fig. 5 is a detail view, partly in section, of the hook-weight, showing the manner of its attachment to the rock-shaft.

Referring to the accompanying drawings, A represents the floor of the mill, on which the machine is set.

B are the logways, constructed in the usual manner, each having an abutment at *b*, against which the log rests when the machine is not in operation.

C is the head-block of the log-carrier, which is slightly elevated above the plane of the forward ends of the logways for an obvious purpose.

D is a rock-shaft journaled in pillow-blocks D' between the logways.

E are pushing-arms, one of which is secured

on each end of the rock-shaft outside of the pillow-block, and E' are standards for supporting these arms when the machine is at rest.

F are the log-lifters, two or more, each pivoted at its rear end to a standard F', secured to the floor, its forward free end resting on a cam G, secured to the rock-shaft in such position that the lifter will be in its lowest position when the machine is at rest, as will be seen in Fig. 3, the lifter being provided with flanges *f* for holding it on the cam. The upper edge of the front end of each lifter is beveled off to a sharp point, as at *f'*, for a purpose which will hereinafter appear.

In Patent No. 408,760, granted to me August 13, 1889, the log-lifters are shown and described as pivoted at their rear ends to the logways, these lifters being made of wooden planks. That arrangement of the log-lifters has been found to be objectionable for the reason that bark and splinters of wood frequently get between them and the logways and prevent their free motion. By mounting the lifters on standards away from and independent of the logways I avoid this objection, which is a serious matter when the rapidity with which the machine is required to be worked is taken into consideration.

H represents the hook, whose pivotal end is bifurcated, one branch *h* of this bifurcated portion being considerably longer than the other, as clearly shown in Figs. 1, 2, and 4.

The hook H is pivoted between two supporting-arms I J, rigidly secured on the rock-shaft, the pivot-bolt 1 passing through the bifurcated part of the hook, for a purpose explained hereinafter. Another bolt 2 passes through the arms I J below the hook, which prevents the latter from falling too low when the machine is at rest, as seen in Fig. 2.

K represents a reciprocating operating-bar, working in any suitable housing K', and L is a pitman, one end of which is pivoted on a bolt 3, passed transversely through the forward end of bar K and through the housing K', the latter being slotted, as at *k'*, to permit of the reciprocation of said bolt. This housing, however, is not considered an essential element of my machine, as any other convenient

means for guiding the operating-bar may be employed. The forward end of the pitman is pivoted on a bolt 4 in the bifurcated portion of the hook below bolt 1, on which the hook is pivoted, as seen in Fig. 4.

For the purpose of holding the hook in an elevated position, so as to clear the log after the latter has been pushed to its place on the head-block, I employ what I term a "hook-weight" M, which is a bar of metal having a slot *m* in one end and provided with a fixed radial pin *m'*, which extends a short distance into the slot. The hook-weight is loosely mounted on the rock-shaft between the arms I J, and, by reason of its slot, is capable of a slight longitudinal movement thereon, so that the pin *m'* may engage with or be disengaged from a shallow radial hole *d* in the rock-shaft, as clearly shown in Fig. 5. A chain *c* connects the free end of the weight with the rear end of branch *h* of the hook.

One of the hook-supporting arms I is made in the form of a bell-crank, the rear arm of which has a lateral projection *i*, serving as a support for the free end of the weight M at such time as the hook is to engage with the log, as seen in Fig. 1, the projection itself being shown also in Fig. 5.

The rear end of the pitman L has a shoulder 30 *l*, which abuts against the rear arm of the bell-crank I when the rock-shaft has been turned sufficient to cause the pushing-arms E to place the log in its proper position upon the head-block, and thus prevents these arms from further crowding the log, and immediately above this shoulder the pitman has an integral finger *l'*, which serves to push the weight M forward, and thus cause it to drop off from its support *i*, which results in its holding the hook elevated, it being understood that the floor of the mill is cut out, as at *a*, to permit the downward swing of both the weight and the bell-crank I.

Any convenient and effective means may 45 be employed to reciprocate the operating-bar K, the mechanism shown serving the purpose very well. In this case the bar has teeth formed on its underside, into which mesh the teeth of a gear-wheel N, mounted on a short 50 transverse shaft O, suitably journaled beneath the floor, the said shaft carrying also a beveled friction-wheel P, with which two other beveled friction-wheels Q engage alternately. These wheels Q are keyed on a longitudinal 55 shaft R, supported beneath the floor in a manner to permit of its movement longitudinally, so as to put either one of the wheels Q into engagement with wheel P, according to the direction in which the operating-bar is to be moved. This movement is imparted to 60 the shaft R by means of a lever S, pivoted horizontally beneath the floor, as at *s*, to whose outer end is secured one end of a vertical lever T, which extends upward through the floor and is pivoted at *t* to a standard U, the inner end of the lever S loosely embrac-

ing the shaft R between collars *r r* thereon. Shaft R is provided with a band-pulley V, over which passes a belt W, (shown in dotted lines in Fig. 2,) leading from any suitable 70 motor.

The operation of my machine is as follows: Assuming that there is a log on the logways resting against the abutments *b* and on the log-lifters F, then when it is desired to place 75 the log upon the carriage the operator throws lever T in the direction to put the friction-wheels into gear to drive the operating-bar forward. This movement of that bar through the pitman and arms I J turns the rock-shaft 80 forward, when the cams G will raise the log-lifters and the log thereon to a plane slightly above that of the carriage. By this time the pushing-arms E and also the hook-supporting arms I J will bear against the log and as the 85 rock-shaft continues to turn, these arms will push the log forward until it reaches its proper place upon the head-block, by which time the shoulder *l* on the pitman will have come into contact with the rear end of the 90 bell-crank I, as before stated, and arrest any further forward turning of the rock-shaft, and consequently of the pushing-arms. The hook will of course be prevented from rising so long as its supporting-arms are against the 95 log. The log being now on the head-block, the operator reverses the motion of the operating-bar, which results in drawing down the hook-supporting arms, thus turning the rock-shaft and lowering the log-lifters and the 100 pushing-arms. Now when the operator desires to turn the log, he again causes the operating-bar to move forward, when the pitman will throw the hook up. It will be understood that the pitman is pivoted to the 105 hook below the pivotal point of the hook in its arms. The hook-weight M now rests on its support *i*, thus leaving its chain slack, in order that the hook may be cantcd forward at the proper time to engage with the log. 110 In this operation the operating-bar is not allowed to make quite a full forward movement in order that the hook-weight may not be pushed off of its support by the finger *l'* on the pitman, but it does move forward far 115 enough to permit the hook to drop over the log. Then the operator again reverses the movement of the operating-bar to swing the hook down onto the log, and as the said bar continues to recede the log is drawn partially off 120 of the head-block and against the sharp ends *f'* of the log-lifters. Then as the hook swings in the arc of a circle the log is turned, and meanwhile drawn clear of the head-block and onto the logways. The sharp ends of the 125 lifters serve a very useful purpose in that they will not permit the log to slip, no matter what its condition may be, whether without bark or having thin, thick, or loose bark. This would not be the case were the ends of the 130 log-lifters blunt, for then the log would be very apt to slip if it were without bark or

having loose bark. The log now having been turned, the operator again causes the operating-bar to move forward to push the log back onto the head-block again, in the manner before described. The free end of the hook-weight now rests on its support *i*, with its pin *m'* in the hole *d* in the rock-shaft, and as the operating-rod is given its full forward throw the finger *l'* on the pitman strikes against the end of the weight and pushes it off from its support, the slot *m* permitting this movement. As the hook-weight is thus pushed forward, of course its pin *m'* will be thrown out of the hole *d* in the rock-shaft, and then when the weight drops the pin will be carried around onto the circumference of the shaft. The weight being now in its lowered position the rear end of the hook will be drawn down, thus throwing the hook portion up out of the way of the log and permitting the pushing-arms to replace the log upon the head-block. The hook is prevented from turning over backward under the influence of the weight by reason of its pivot-bolt 1 coming into contact with the upper edge of the pitman. When the machine is brought to rest, the rock-shaft will be in position to permit the pin *m'* to again drop into the hole *d*, thus lowering the weight until its lower end passes beyond the support *i* on the bell-crank I, so that when the machine is again started the bell-crank will carry the weight up with it.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the logways, of a rock-shaft suitably mounted between said logways at their forward ends, cams secured on said shaft, standards placed between but independent of the logways, and lifting-levers whose rear ends are pivoted in said standards and whose forward ends rest on the cams, substantially as described.

2. The combination, with the logways, of a rock-shaft suitably mounted between said logways at their forward ends, cams secured on said shaft, and log-lifters, each having a sharp projection on its front end, the forward ends of said lifters resting on the cams and their rear ends pivoted on any suitable support, for the purposes stated.

3. The combination, with the rock-shaft, of the hook, a support on which the hook is pivoted secured to said shaft, an operating-bar, and a pitman, the rear end of the latter being pivoted to the operating-bar and its forward end pivoted to the hook below the point at which the hook is pivoted to its support, whereby in the movements of the operating-bar the hook is automatically raised and lowered and the shaft rocked, substantially as described.

4. The combination, with the logways, of a rock-shaft between them, pushing-arms secured to said shaft, cams also secured to the shaft, log-lifters pivoted at their rear ends to

suitable supports, their forward ends resting on said cams, a hook pivoted on a support secured to the rock-shaft, and mechanism for rocking the shaft, the hook being automatically raised and lowered by the mechanism that rocks the shaft to raise the lifters and throw the pushing-arms forward.

5. The combination, with the rock-shaft, of a hook having a bifurcated shank, two arms secured to the shaft between which the hook is pivoted by a bolt passing through its bifurcated portion and into said arms, a reciprocating operating-bar, and a pitman, the rear end of the latter pivoted to said bar and its forward end pivoted in the bifurcation of the hook below the bolt on which the hook is pivoted, whereby in the forward movement of the operating-bar the hook is raised and prevented from falling backward and the shaft rocked, substantially as described.

6. The combination, with the rock-shaft and the pushing-arms secured thereon, of a bell-crank secured to the shaft, a hook pivoted on the bell-crank, an operating-bar, and a pitman pivoted to said bar and to the hook, the pitman having a shoulder which engages with the bell-crank to limit the forward rocking of the shaft, whereby the pushing-arms are prevented from pressing against the log after the latter has been pushed to its place on the head-block, substantially as described.

7. In a log lifting and turning machine, the combination of a rock-shaft, a hook pivoted on a support secured to said shaft, mechanism for rocking the shaft and canting the hook, and an automatically-actuated device for holding the hook elevated at the will of the operator, for the purposes stated.

8. In a log lifting and turning machine, the combination of a rock-shaft, a hook pivoted on a support secured to said shaft, mechanism for rocking the shaft and canting the hook, and an automatically-actuated weight connected to the hook for holding the latter elevated at the will of the operator.

9. In a log lifting and turning machine, the combination of a rock-shaft, a hook pivoted to a support secured to said shaft, mechanism for rocking the shaft and canting the hook, a weight hung at one end upon the rock-shaft, its other end resting normally upon a suitable support and connected to the hook, and means for automatically dropping the weight to hold the hook elevated at the will of the operator, for the purposes stated.

10. The combination, with the rock-shaft having a shallow hole serving as a pin-seat, of a bell-crank secured to the shaft and having a lateral projection on its rear arm for the support of the free end of the hook-weight, a hook pivoted on the bell-crank, a hook-weight having an elongated opening through one end, which end is placed over the rock-shaft next to the bell-crank, and also having a radial pin extending into said opening in position to register at the proper

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time with the pin-seat in the rock-shaft, a chain connecting the free end of said weight with the shank of the hook, an operating-bar, and a pitman pivoted to said bar and to the hook, the pitman being provided with a finger for pushing the hook-weight off from its support when the hook is to be held in an elevated position, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FLAVEL SIMONSON.

Witnesses:

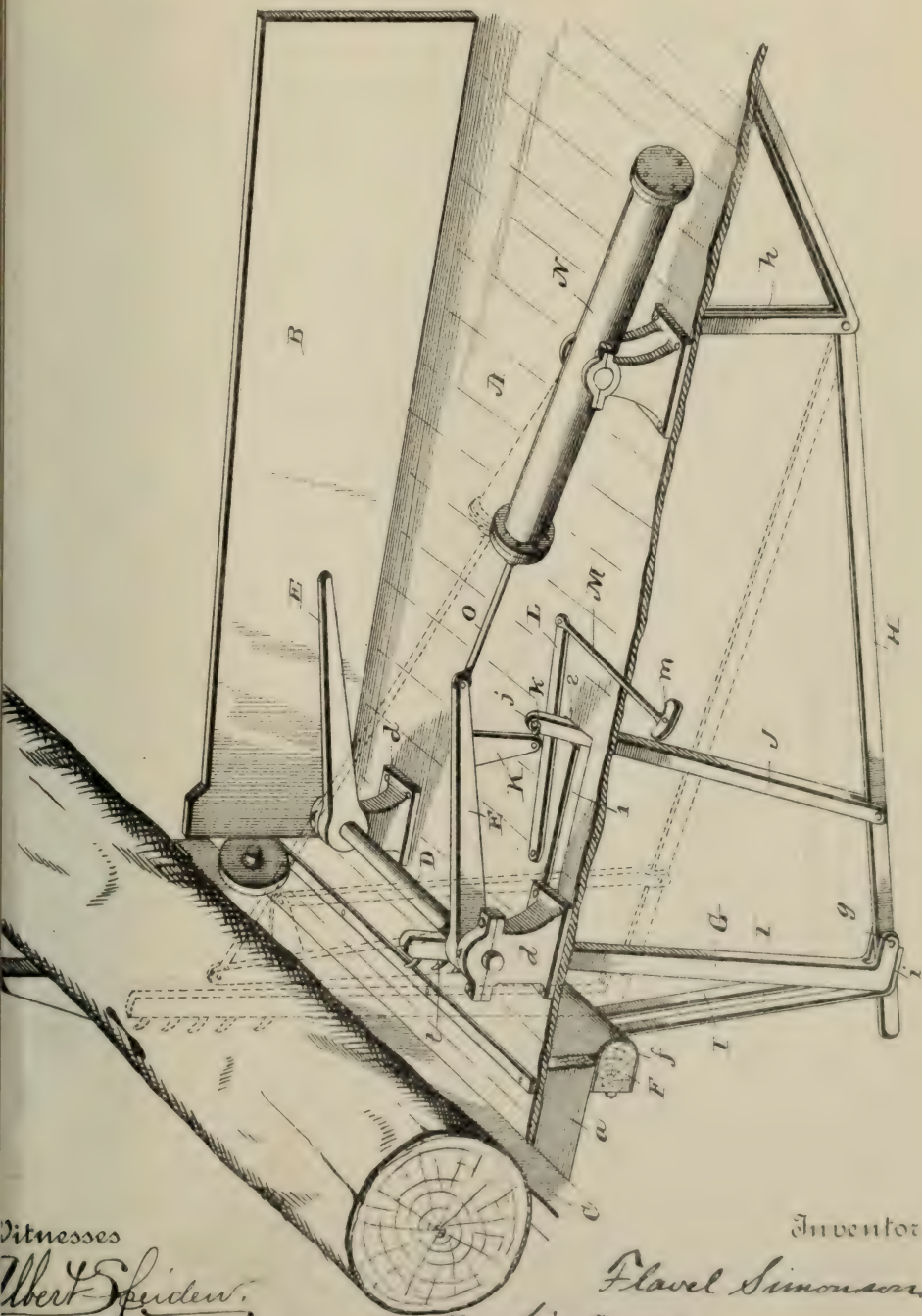
WM. HUNTER MYERS,
ALBERT SPEIDEN.

No Model.)

F. SIMONSON.
LOG LOADER AND TURNER.

No. 448,590.

Patented Mar. 17, 1891.



Witnesses

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D. R. Come

Inventor,

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By his Attorneys,

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FLAVEL SIMONSON, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO GEORGE H. CHAMBERLAIN, OF SAME PLACE.

LOG LOADER AND TURNER.

SPECIFICATION forming part of Letters Patent No. 448,590, dated March 17, 1891.

Application filed February 13, 1890. Renewed November 22, 1890. Serial No. 372,292. (No model.)

To all whom it may concern:

Be it known that I, FLAVEL SIMONSON, a citizen of the United States of America, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented a certain new and Improved Log Loader and Turner, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to improvements in log loaders and turners designed to first load the saw-log onto the carriage and then turn it into the desired position, the object of the invention being the production of a machine of this class which will be simple in construction and swift in action.

The invention will first be described in connection with the accompanying drawing (which is a perspective view of the machine with a log upon the carriage) and then pointed out in the claims.

A is the floor of the mill, upon which the machine is set, part of the floor being removed to show certain parts located beneath it.

B is one of the logways; the other being removed.

C is the carriage, located in front of the logways.

D is a rock-shaft journaled in pillow-blocks between the forward ends of the logways.

E are push-arms rigidly secured on the rock-shaft D.

F is a transverse beam secured to the floor-joists a directly under the rear edge of the carriage. This beam is rounded on its rear edge and has a metal covering f.

G is a toothed bar for turning the log, the teeth t being secured to the bar in any suitable manner. The lower end of the bar G, which is passed down through the floor, is bent at a right angle, and is bifurcated, as shown, so as to straddle a raising-bar H, which is pivoted at one end to a bracket h underneath the floor, the bar G being pivoted at the end of its angular portion at g to the bar H.

I I are two metal strips secured at their upper ends to the beam F and extending downward and rearward, passing on each side of

the bar H to serve as a guide for it. The lower ends of these guide-strips are bent rearward at an angle, as at i, and rest under the angular portion of the toothed bar when that bar is in its lowest position, thereby serving to hold the latter in a rearwardly-inclined position away from the log.

J is a link, whose lower end is loosely pivoted to bar H, its upper end passing through and working in an L-shaped slot l z, cut in the floor, to one side on an imaginary vertical line drawn from the pivotal point of the link, so that the link will gravitate sidewise. In the upper end of link J there is a hole adapted at proper times to receive a pin k, a lug K, secured to one of the push-arms E.

L is a lever pivoted horizontally at one end to the floor behind the link J, assuming the front of the latter to be toward the left of the machine, and M is a rod, one end of which is pivoted to the other end of the lever, its free end extending outward beyond the logway (not shown) and provided with a head m.

N is an oscillating steam-cylinder provided with the necessary appliances for supplying and utilizing steam. (Not shown.)

O is the piston-rod of the steam-cylinder, pivoted at its outer end to one of the push-arms E.

The operation of the machine is very simple. Assume that the log is on the logways over the push-arms. Now the operator admits steam to the rear end of the steam-cylinder, which drives the piston-rod forward, and thus, through its connection with one of the push-arms, rocks the shaft D, whereby the rear ends of both push-arms are raised, so as to roll the log off the arms and onto the carriage. When it is desired to turn the log, the operator presses his foot against the head of rod M, so as to pull lever I against link J, which is now in the portion 2 of the slot in the floor, when the pin k on lug K will enter the hole j in the link, thus connecting the link with the push-arm. Then he lets steam into the lower end of the cylinder, which raises the push-arm, and consequently the link, and the latter in turn pulls bar H upward, which is guided by the guide-strips I. As bar H rises, the toothed bar G is raised by it, the

latter swinging forward on its pivot *g* until it strikes against the log, as seen in dotted lines, the beam *F* preventing the toothed bar in its upward movement from coming into contact with the carriage. In the upward movement of the toothed bar its teeth will engage with the log and turn it. At this time the link *J* is in the portion 1 of the slot in the floor. After the log is turned the operator reverses the engine, when the parts will be brought down into the position of rest, when the link *J* will be opposite the portion 2 of the slot in the floor and gravitate away from its connection with the lug on the push-arm.

15 Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a raising-bar pivoted at one end to a suitable support, and mechanism for operating said bar, of a toothed bar having an angular bend at its lower end and pivoted to the raising-bar at the end of its angular portion, and a support for holding the toothed bar in an inclined position when at rest.

2. The combination, with a raising-bar pivoted at one end to a suitable support, and mechanism for operating said bar, of a toothed bar bifurcated at its lower end, the bifurcated portion being bent at an angle, passed over the raising-bar, and pivoted thereto at the end of its angular portion, and a support on each side of the raising-bar to hold the toothed bar in an inclined position when at rest.

3. The combination, with the pivoted raising-bar, a guide for said bar, a toothed bar bifurcated, bent, and pivoted to the raising-bar in the manner described, and a support for holding the bar inclined while at rest, of a rock-shaft having a fixed arm, mechanism for rocking the shaft, and a link pivoted at its lower end to the raising-bar and detachably connected at its upper end to the arm on the rock-shaft, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FLAVEL SIMONSON.

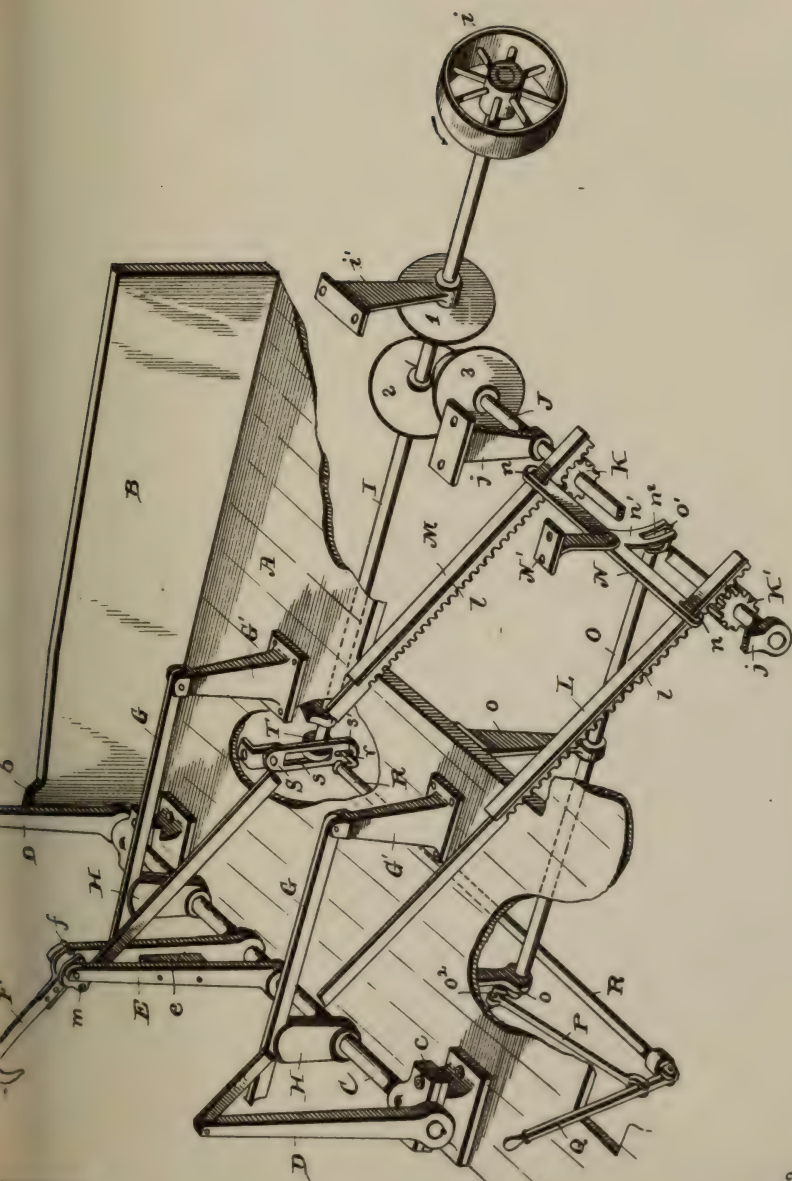
Witnesses:

WM. HUNTER MYERS,
G. W. BALLOCH.

F. SIMONSON.
LOG LIFTER AND TURNER.

. 448,591.

Patented Mar. 17, 1891.



Witnesses
J. E. Spinden.
R. Corne

Inventor,
Flavel Simonson
By his Attorneys,
Myers & Webster

FLAVEL SIMONSON, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO GEORGE H. CHAMBERLAIN, OF SAME PLACE.

LOG LIFTER AND TURNER.

SPECIFICATION forming part of Letters Patent No. 448,591, dated March 17, 1891.

Application filed February 13, 1890. Renewed November 22, 1890. Serial No. 372,293. (No model.)

To all whom it may concern:

Be it known that I, FLAVEL SIMONSON, a citizen of the United States of America, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented a certain new and Improved Log Lifter and Turner, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to certain improvements in log lifting and turning machines of the class in which the log is lifted from the logways, pushed onto the saw-mill carriage, and then drawn clear of the carriage in the operation of turning it.

The object of my present invention is to provide improved means for operating the rock-shaft and controlling the movements of the hook.

The invention will first be described in connection with the accompanying drawing, which is a perspective view of my machine, and then pointed out in the claims.

In the drawing, A represents the floor of the mill, upon which the machine is set, parts of the floor being broken out to show portions of the machine.

B is one of the logways, constructed in the usual manner. It will be understood that there are two of these logways, one at each side of the machine, and each of them has an abutment at *b*, against which the log rests at the time the machine is put into operation.

C is the rock-shaft, mounted in pillow-blocks *c*, and on the shaft, preferably outside of the pillow-blocks, are secured the push-arms D.

E E are two arms secured on shaft C a short distance apart, and in the upper ends of these arms is pivoted the hook F, which when down rests on a block *e*, secured between arms E. The butt of the hook is bifurcated, and each branch is separately pivoted to its respective arm E. On the rear end of each branch of the hook-butt there is formed an outwardly-projecting lug *f*, which rides freely over the upper rounded ends of arms E when the hook is canted forward to engage with the log, but which contact with the back of said arms when the hook is thrown up into the "reaching" position shown and serve to hold the hook in that position, thereby preventing the

latter from being tilted over backward by any sudden jar. No claim to the hook is made in this application, as its novel features have been made the subject-matter of claim in another application filed by me in the United States Patent Office of even date herewith.

G' are standards, in whose upper ends are pivoted the rear ends of the lifting-bars G, the free ends of these bars resting on cams H, keyed on the rock-shaft C. The front ends of the lifting-bars are sharpened, as shown, to prevent the log from slipping.

The construction of the lifting-bars and their attachment to standards form no part of the present invention, as these features are claimed in another application for United States Patent filed by me October 16, 1889, and numbered 327,168.

I is the power-shaft, provided with a belt-pulley *i*, which is connected with some suitable motor, the shaft being supported in hangers *i'*, depending from the floor. On this shaft are secured two beveled friction-wheels 1 2, which are adapted to be thrown into gear alternately with a like friction-wheel 3 on a shaft J, supported in hangers *j* and carrying two small pinions K K'.

L and M are two rack-bars, which, however, are provided with rack-teeth for only a portion of their length, the toothed portions of the bars being adapted to engage with the pinions K K'. One of these rack-bars L is pivoted to one of the push-arms, and the other rack-bar M is pivoted at *m* to the hook, eccentric to the point of pivotal attachment of the hook to the hook-arms. The toothed portions of the rack-bars are T-shaped in cross-section, and consequently the upper sides of the bars are flanged, as at *l*, for a purpose presently to be described.

N is a rocking yoke, pivoted centrally to a bracket N', secured to the under side of the floor. Each end of the yoke has a T-shaped slot *n*, these slots being adapted to receive the flanged portions of the rack-bars L and M, and the yoke is provided centrally with an arm *n'*, the lower end of which is slotted, as at *n*².

O is a longitudinal shaft hung in hangers *o*, depending from the floor. The ends of this shaft are cranked, as at *o'* *o*², the crank

o' engaging in the slot in the arm n' of the yoke.

P is a link, one end of which is journaled on the crank o^2 of shaft O, its other end being pivoted to a lever Q, extending upward through the floor.

R is a transverse shaft supported in hangers. (Not shown.) One end of this shaft is pivotally connected with the lower end of lever Q, the other end of the shaft being cranked, as at r , for a purpose now to be explained.

S is a metal plate, pivoted at its upper end to a bracket S' , secured to the under side of the floor. This plate is slotted at s to partly pass over a disk T on the forward end of the power-shaft I, and below this slot s there is another slot s' to receive the crank r on shaft R.

The operation of my machine is as follows: Assume the parts of the machine to be in the positions shown and the power-shaft moving in the direction indicated by the arrow. The hook is now ready to drop and engage the log, assumed to be on the head-block. (Not shown.) Now the operator moves lever Q rearward, which rocks the shaft R, thereby swinging the plate S forward, which, through the engagement of the disk T with said plate moves the shaft I forward, so as to throw the friction-wheel 1 into engagement with wheel 3, thus turning shaft J backward. This movement draws the hook down into engagement with the log, draws the log off from the head-block, and turns it, by which time the push-arms D have fallen to near a level with the lifting-bars G. The operator then pushes lever Q forward again, so as to throw friction-wheels 2 and 3 into gear, when the push-arms are moved forward, pushing the log back onto the head-block, the hook in this movement releasing its hold on the log and rising to the position shown. Lever Q is now brought to a perpendicular in order to throw all the friction-wheels out of gear and stop the machine. When this is done, the operator moves the lever sideways away from the machine, which movement, through link P, rocks shaft O, and consequently the yoke N. As the yoke is rocked the rack-bar M is raised out of mesh with pinion K and rack-bar L is forced down into mesh with pinion K'. Then the lever is moved to the rear throwing friction-wheels 1 and 3 into gear, so as to run the rack-bars backward and pull the push-arms and hook-arms and hook down into their normal position below a level with the lifting-bars. As these parts are drawn down into this position by the rack-bar L, it is apparent that as the rack-bar M is free of its pinion K it would slide backward at once, and thus permit the hook to fall back onto the log, were there no provision for arresting this sliding of that bar. It will be noticed, however, that as the yoke is not in a level position the bar M is subject to considerable friction in moving through the slot in the yoke, this friction

being sufficient to overcome the backward pressure exerted by the weight of the hook when in the reaching position. By the time, however, that the hook-arms have arrived at about a horizontal position the gravity of the hook will overcome that friction, bar M will slide backward, and the hook will fall down onto the block e .

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the rock-shaft, the push-arms and the hook-arms secured thereon, and the hook pivoted to the hook-arms, of a shaft bearing two pinions, mechanism for turning said shaft in either direction at will, a rack-bar pivoted to the hook and adapted to engage with one of the pinions, a rack-bar pivoted to one of the push-arms and adapted to engage with the other pinion, and means for throwing either of the rack-bars out of and the other into engagement with the pinions at will, for the purposes set forth.

2. The combination, with the rock-shaft, the push-arms and the hook-arms secured thereon, and the hook pivoted to the hook-arms, of a shaft bearing two pinions, mechanism for turning said shaft in either direction at the will of the operator, two flanged rack-bars adapted to engage with said pinions, one of said bars being pivoted to the hook and the other to one of the push-arms, a pivoted yoke whose ends are in engagement with the flanges on the rack-bars, and mechanism for rocking the yoke, for the purposes set forth.

3. The combination, with the pinion-shaft carrying two pinions and capable of being rotated in either direction at the will of the operator, and the two rack-bars pivoted as described and adapted to engage with the pinions, of the centrally-pivoted yoke in engagement with the rack-bars at its ends and provided with a downwardly-extending slotted arm, a shaft cranked at each end, the crank on one end engaging with the slot in the yoke-arm, a pivoted lever, and a link one end of which is journaled on the other crank on the said cranked shaft, its other end being pivoted to the lever, for the purposes set forth.

4. The combination, with the power-shaft bearing friction-wheels 1, 2 and disk T, of shaft J, bearing friction-wheel 3 and pinions K K', rack-bars L M, pivoted as described, yoke N, provided with slotted arm n' , shaft O, having cranks o and o' , shaft R, having crank r , the slotted plate S, pivoted as described, lever Q, pivoted to shaft R, and link P, connecting lever Q and shaft O, all arranged substantially as described, and for the purposes set forth.

In testimony whereof I affix my signature in presence of two witnesses.

FLAVEL SIMONSON.

Witnesses:

WM. HUNTER MYERS,
G. W. BALLOCH.

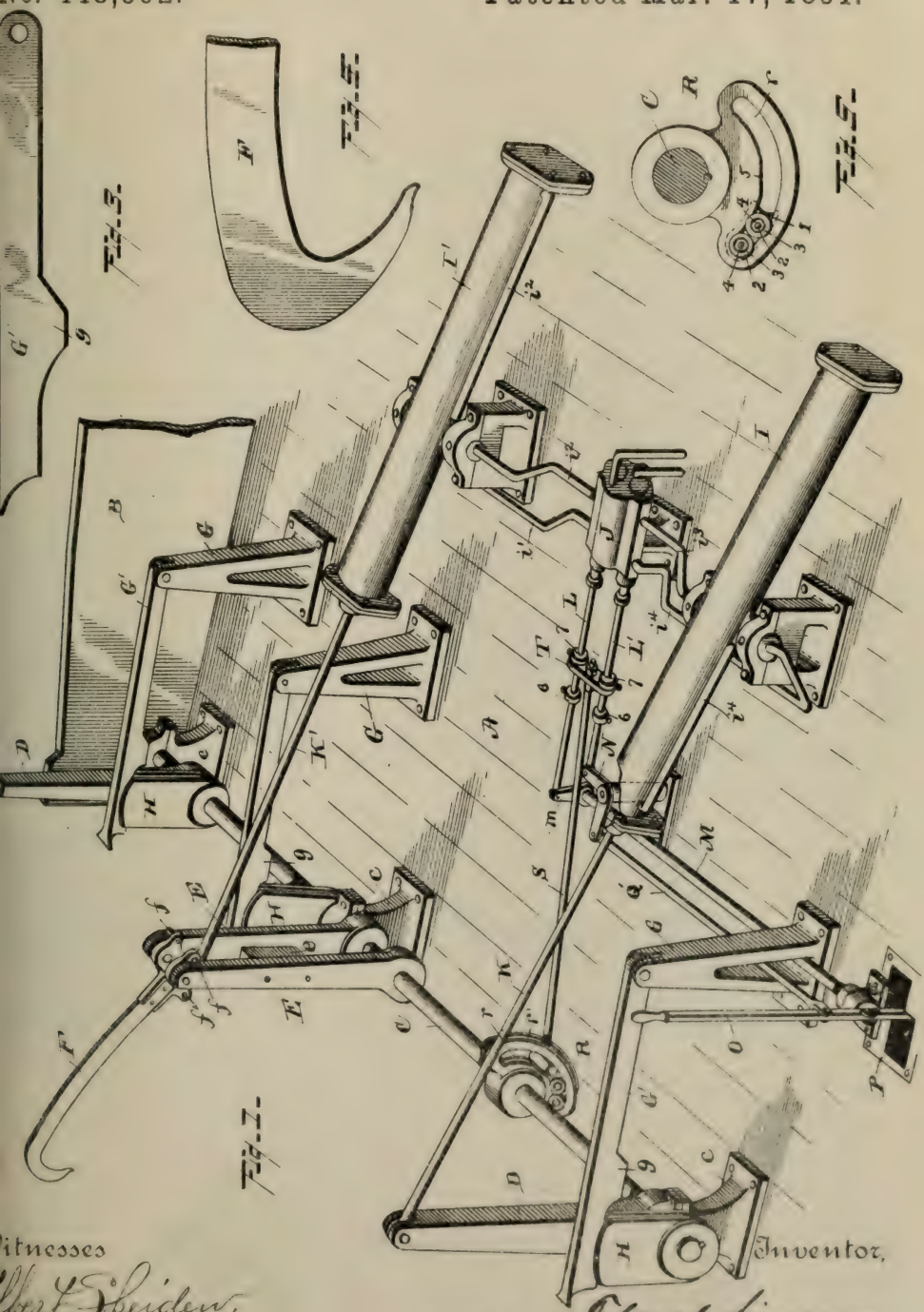
No Model.)

2 Sheets—Sheet 1.

F. SIMONSON.
LOG LIFTER AND TURNER.

No. 448,592.

Patented Mar. 17, 1891.



Witnesses
Albert Spindler,
D. P. Cowl

Inventor,
F. Simonson
By his Attorneys,
Munroe & Co.

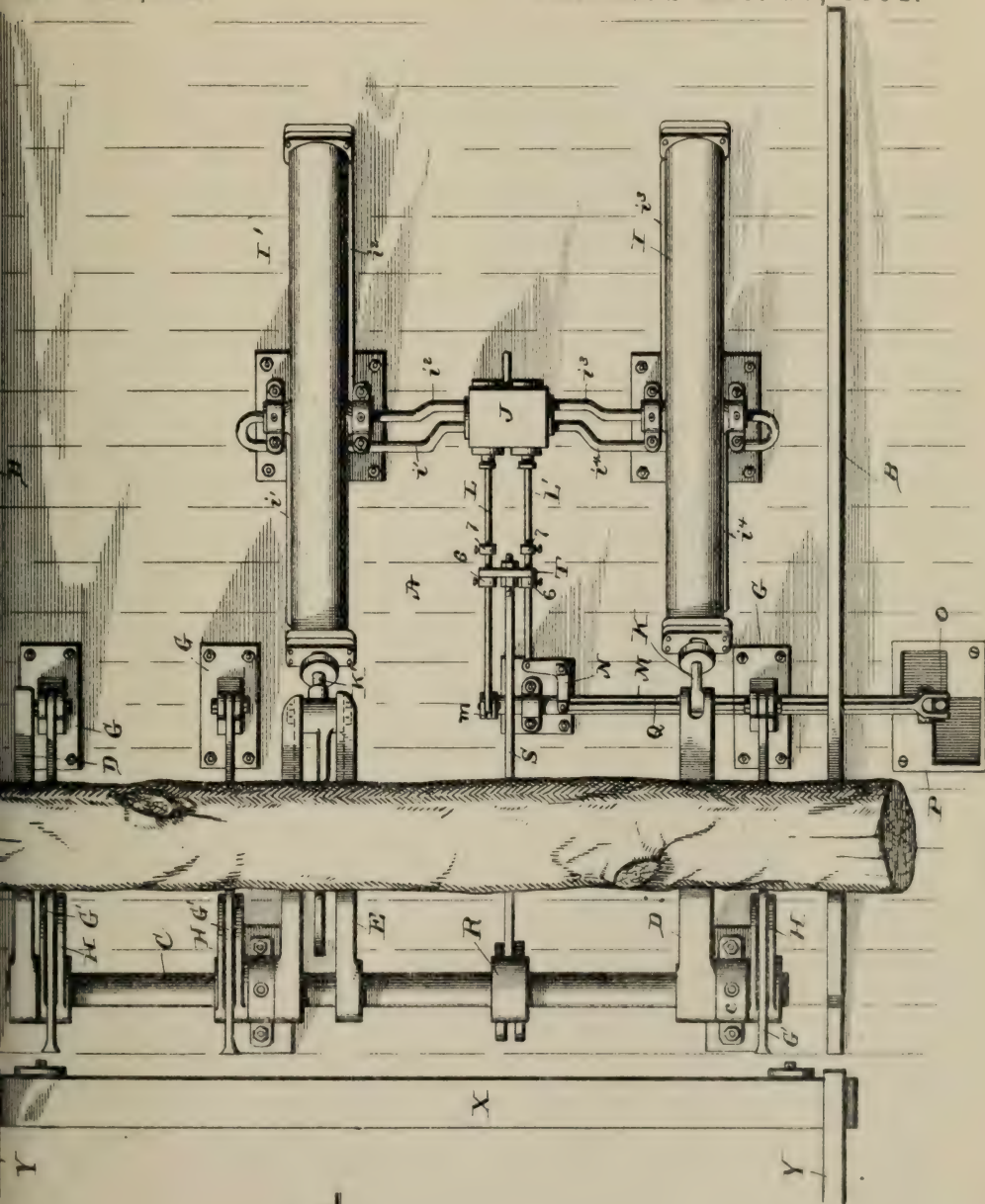
(No Model.)

2 Sheets—Sheet 2.

F. SIMONSON. LOG LIFTER AND TURNER.

No. 448,592.

Patented Mar. 17, 1891.



Witnesses

Albert S. Spiden,
D. R. Coile

Inventor,

Flavel Simonson,
By his Attorneys,
Myers & Webster

FLAVEL SIMONSON, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO GEORGE H. CHAMBERLAIN, OF SAME PLACE.

LOG LIFTER AND TURNER.

SPECIFICATION forming part of Letters Patent No. 448,592, dated March 17, 1891.

Application filed February 13, 1890. Renewed November 22, 1890. Serial No. 372,294. (No model.)

To all whom it may concern:

Be it known that I, FLAVEL SIMONSON, a citizen of the United States of America, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented a certain new and Improved Log Lifter and Turner, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to new and useful improvements in log lifting and turning machines of the class in which the log is lifted from the logways, pushed onto the carriage, and drawn clear of the carriage in the operation of turning it.

The principal object of my present invention is to provide means whereby the piston-rods of two steam-cylinders may be utilized in operating the rock-shaft and the hook, in this manner rendering the movements of the operative parts of the machine very rapid.

Another object of this invention is to provide means whereby all the various movements of the operative parts of the machine may be controlled by a single lever.

A still further object of my invention is the improvement of certain detail parts of the machine.

The invention will first be described in connection with the accompanying drawings, and then pointed out in the claims.

Figure 1 is a perspective view of the machine in position to turn the log, the carriage and log being omitted. Fig. 2 of the drawings is a plan view of the machine at rest with a log on the lifting-bars, and also showing the log-carriage. Fig. 3 is a side elevation of one of the lifting-bars. Fig. 4 is a side elevation of a portion of the hook. Fig. 5 is a side elevation of the quadrant.

In the drawings, A is the mill-floor upon which the machine is set; *x*, the log-carriage; Y, its head-blocks, and B a portion of one of the logways.

C is a rock-shaft mounted in pillow-blocks *c*, and D are push-arms secured on the shaft.

E E are two arms secured on the shaft C a short distance apart, and in the upper ends of these arms is pivoted the hook F, which when down rests on a block *e*, secured between arms E. The butt of the hook is bifur-

cated, and each branch is separately pivoted to its respective arm E. On each branch of the hook-butt there is formed an outwardly-projecting lug *f*, which rides freely over the upper rounded ends of arms E when the hook is canted forward to engage with the log, but which contact with the back of said arms when the hook is thrown up into the "reaching" position shown in Fig. 1, thereby preventing the hook from being tilted over backward by any sudden jar.

A very serious objection to hooks of the common form is that in withdrawing the hook from the log it is apt to gouge or split the timber, this being due to the fact that the bend of the hook is made on a true curve. To avoid this objection I change the curve near the point by giving that portion of the hook a slight outward bend, thereby making it concave on the outer side and convex on the inner side. By this construction, when the hook is being withdrawn from the log its point will not move in the arc of a circle, but will leave the log at nearly a right angle.

G are standards, in whose upper ends are pivoted the rear ends of the lifting-bars G', the forward ends of these bars resting on cams H, keyed on the rock-shaft C. As shown, the front ends of the bars are sharpened to prevent the log from slipping. While the log is lying on these bars prior to being raised, the push-arms, the hook-arms and hook, and the cams are in their lowest position, or below the level of the lifting-bars G, as seen in Fig. 2. Now, in order that the log may be fully raised before the push-arms come into contact with it, it is essential that the cams act on the lifting-bars in a hurried manner, and in order that they may be able to do this and still not raise the lifting-bars too high in moving up to their vertical position I form projections *g* on the under side of the bars, giving the forward ends of these projections a gradual curve, as clearly shown in Fig. 3.

In another application for United States Letters Patent filed by me October 16, 1889, and numbered 327,168, I have shown, described, and claimed the lifting-bars having sharpened ends and pivoted to standards, and therefore I lay no claim to those specific features in this specification, the only feature of

the lifting-bars herein claimed being that of the above-mentioned projections.

I I' are two oscillating steam-cylinders connected with a steam-chest J by suitable pipes $i' i^2 i^3 i^4$ for conveying the steam in front of and in rear of the pistons. The piston-rod K of cylinder I is pivoted to one of the push-arms D, and the piston-rod K' of cylinder I' is pivoted to the hook at f' , eccentric to the pivotal points of the hook to its arms.

L L' are the valve-stems of the engine, one of which L is pivoted to a crank m on one end of a shaft M, the other valve-stem L' being pivoted to one arm of a horizontal bell-crank N. The outer end of shaft M is pivoted to a lever O, whose lower end passes down through an opening in the floor covered by a stop-plate P, as shown.

Q is a link pivoted to a lever O above shaft M and also to an arm of the bell-crank N.

R is a quadrant fixed on the rock-shaft C. As will be seen, this quadrant is slotted annularly, as at r , and also radially, as at r' . Inside of the radial slot is placed a metal plate 1, as seen in dotted lines in Fig. 5, which is adjustably secured therein by means of bolts 2, passing through a washer 3, and provided with nuts 4.

S is a pitman provided with a T-head, which lies horizontal in the annular slot in the quadrant, the rear wall of that slot being cut on a straight line at 5 for the purpose of allowing the head to be turned in that position after having been inserted through the radial slot. The other end of the pitman is secured in a yoke T, which works loosely on the valve-stems between collars 6 and 7, adjustably secured on the stems.

The operation of my machine is as follows:
The first thing to be done is to adjust the cut-off of the steam. To do this I first turn the rock-shaft so that the quadrant will be down and the T-head of the pitman at the end of the slot. I then set the valves on the center and set the collars 6 against the yoke. I next open the valves and set collars 7 against the yoke. Now I turn the rock-shaft so as to bring the quadrant up, as shown in Fig. 1, close the valves, place the yoke against collars 7, and finally adjust the quadrant-plate 1 against the T-head of the pitman. Now assume that the parts of the machine are in the position shown in Fig. 2. The operator pulls lever O sidewise away from the machine, which movement through link Q and bell-crank N opens the port communicating with pipe i^3 and admits steam into the rear end of cylinder I, driving its piston-rod forward, and thereby rocking shaft C forward. The cams H now come into contact with the projections g on the lifting-bars, raising the bars quickly, and then pass off these projections into the curves in front of the projections, which curves compensate for the arc of the circle described by the cams, preventing the bars from being raised too high. By this time the push-arms have come into contact

with the log, and in the continued forward rocking of shaft C they push the log off onto the head-blocks of the carriage, the hook 70 meanwhile remaining down on the block e . The pitman, through the quadrant and the yoke, has now centered the valves and also drawn lever O back into a perpendicular position. The operator now draws the lever 75 to the rear, which movement, through shaft M and its crank m , opens the port communicating with pipe i' , leading steam into the forward end of the cylinder I', driving its piston-rod backward, and thereby rocking 80 shaft C and its connected ports back into their normal positions of rest and lowering the lifting-bars. Now, when it is desired to turn the log, the operator pushes the lever forward, rocking shaft M and its crank m so as to 85 open the port communicating with pipe i^2 and leading steam into the rear end of cylinder I'. As the piston-rod is pushed forward, rocking shaft C forward, the hook is raised to the position shown in Fig. 1, ready to be engaged with the log, by which time the quadrant has acted on the pitman to close the valves. The operator now pulls lever O backward, opening the port communicating with pipe i' , leading steam into the forward end of 95 cylinder I'. As the piston-rod K' is moved backward the hook is drawn down into engagement with the log, and in its backward movement pulls the log with it until the latter strikes against the ends of the lifting-bars, which stand in a plane below the axis of the log. Now, as the hook continues to draw upon the log the latter makes a quarter-turn, and in so doing is drawn up onto the lifting-bars, entirely clear of the head-blocks. 105 The log is now to be pushed back onto the head-blocks, and for this purpose the operator moves lever O forward to admit steam into the rear end of cylinder I', which results, as before stated, in rocking shaft C forward, releasing the hook from the log and raising it to the position shown in Fig. 1. It is now desired to bring all the parts to positions of rest without the hook coming into contact with the log, and to do this the operator pushes lever 110 O sidewise toward the machine, admitting steam through pipe i^4 into the forward end of cylinder I, thereby rocking shaft C backward. As piston-rod K' is not now in action, it offers some resistance in being pushed backward 120 by the hook, and this resistance, at the pivotal point f' , which is eccentric to the points of pivotal attachment of the hook to its arms, tends to hold the hook elevated until about the time all the parts have arrived at rest, 125 when it will drop down by gravity onto the block e .

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is:—

1. In a log lifting and turning machine, the combination, with pivoted lifting-bars, a rock-shaft carrying push-arms, hook-arms, and cams for raising the lifting-bars, and a hook

pivoted to the hook-arms, of two steam-cylinders whose piston-rods are pivoted to one of the push-arms and to the hook, respectively, a steam-supply for the cylinders, and mechanism for governing the admission of steam to either cylinder at will, for the purposes set forth.

2. The combination, with pivoted lifting-bars, a rock-shaft carrying push-arms, hook-arms, and cams for raising the lifting-bars, and a hook pivoted to the hook-arms, of two steam-cylinders whose piston-rods are pivoted to one of the push-arms and to the hook, respectively, a steam-chest common to both cylinders, and mechanism controlled by a single lever for admitting steam to either cylinder at will, for the purposes set forth.

3. The combination, with the rock-shaft carrying the push-arms and the hook-arms, and a hook pivoted to the hook-arms, of two steam-cylinders whose piston-rods are pivoted to one of the push-arms and to the hook, respectively, a steam-chest common to both cylinders and having two valve-stems, a yoke having limited movement on said stems, a quadrant having an adjustable plate, and a pitman connecting the yoke and the quadrant, for the purposes set forth.

4. In a log lifting and turning machine of the class described, the combination, with two steam-cylinders whose piston-rods are pivoted to one of the push-arms and to the hook, respectively, and a steam-chest having two valve-stems, of a cranked shaft pivotally connected to one of the valve-stems, a lever to which the other end of said shaft is pivoted, a bell-crank to one arm of, which the other

valve-stem is pivoted, and a link pivotally connecting the lever and the bell-crank, for the purposes set forth.

5. In a log lifting and turning machine, the combination, with a rock-shaft carrying push-arms and cams, of lifting-bars whose rear ends are pivoted to fixed supports, their free ends resting on the cams, each of said bars having a projection upon its under side, the front end of which recedes to a level with the bar in a curve coincident with the arc described by the cam, for the purposes stated.

6. In a log lifting and turning machine of the class described, the combination, with the rock-shaft and means for operating it, of a hook-support secured on said shaft, a hook concave on its outer side near the point and convex on its inner side opposite said concavity, pivoted to said support, and a reciprocatory rod or bar pivoted to the hook, for the purposes stated.

7. In a log lifting and turning machine of the class described, the combination, with the rock-shaft and means for operating it, of the hook-arms secured on said shaft, a hook having a bifurcated butt pivoted between the upper ends of the hook-arms, each branch of the butt having an outwardly-projecting lug, and a reciprocatory rod or bar pivoted to the hook, for the purposes stated.

In testimony whereof I affix my signature in presence of two witnesses.

FLAVEL SIMONSON.

Witnesses:

WM. HUNTER MYERS
G. W. BALLOCH.

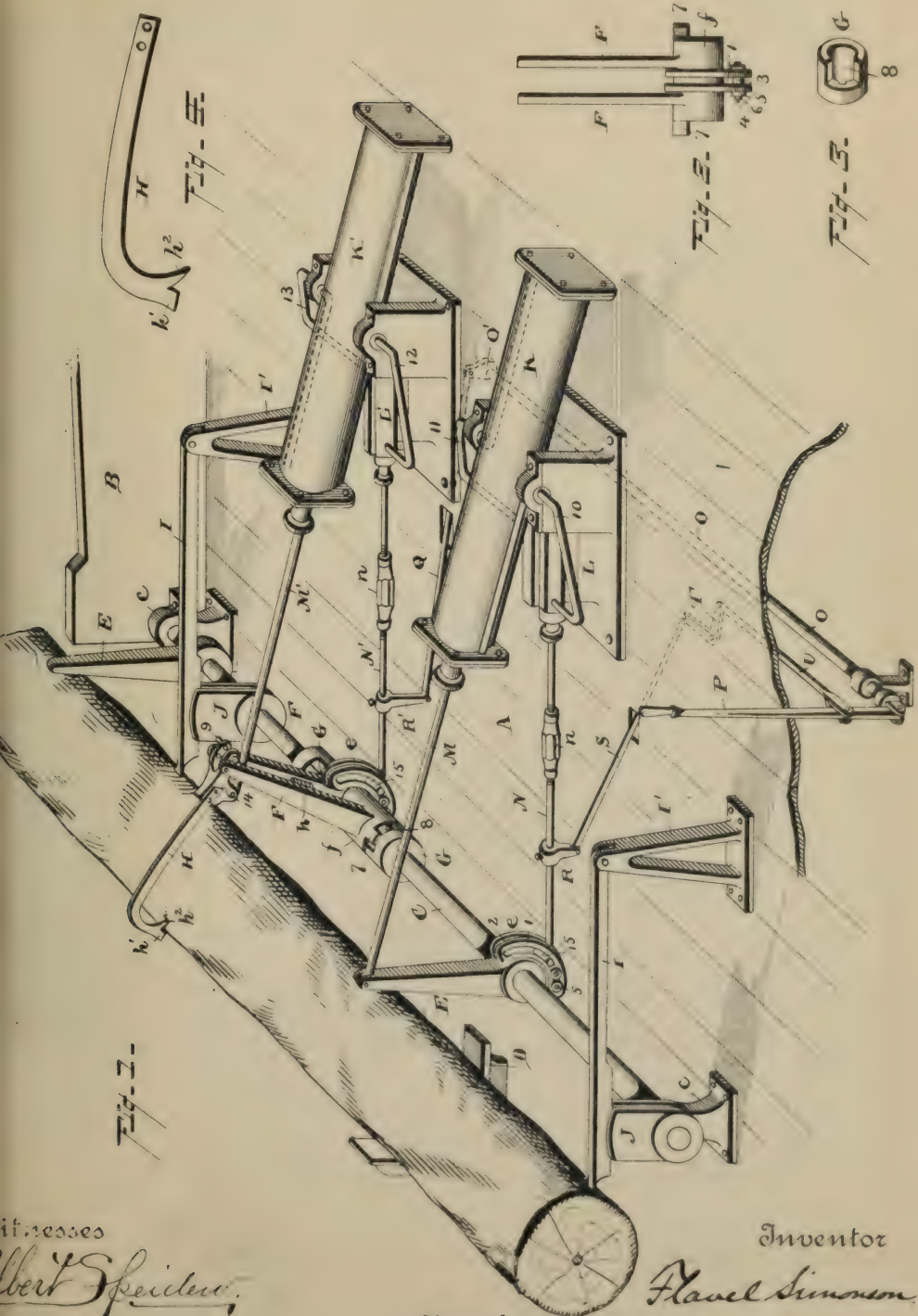
1

(No Model.)

F. SIMONSON.
LOG LIFTER AND TURNER.

No. 448,593.

Patented Mar. 17, 1891.



Witnesses

Albert Speiden,
M. Copenhaver.

Inventor

Flavel Simonson.

By his Attorneys,

Morgan & Mott.

UNITED STATES PATENT OFFICE.

FLAVEL SIMONSON, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO GEORGE H. CHAMBERLAIN, OF SAME PLACE.

LOG LIFTER AND TURNER.

SPECIFICATION forming part of Letters Patent No. 448,593, dated March 17, 1891.

Application filed May 26, 1890. Renewed February 24, 1891. Serial No. 222,223. (No model.)

To all whom it may concern:

Be it known that I, FLAVEL SIMONSON, a citizen of the United States of America, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented a certain new and Improved Log Lifter and Turner, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to certain new and useful improvements in log lifting and turning machines of the class in which a log is lifted from the logway, pushed onto the carriage, and turned by mechanism controlled by a single lever, such a machine being shown and described in an application for Letters Patent of the United States filed by me on the 13th day of February, 1890, and numbered 340,338.

One object of my present invention is to provide for the operation of the hook-carrying arms independent of the operation of the push-arms, whereby a round log may be turned after it has been pushed onto the carriage and the hook may be withdrawn out of the way of the carriage the instant the log is pushed back into position, thereby very materially increasing the operative speed of the machine.

Another object of my invention is the production of a hook that will disengage itself from the log when the latter is turned.

My invention consists, first, in mounting the hook arms loosely upon the rock-shaft and in engagement with recessed collars rigidly secured on said shaft; secondly, in a novel construction of the hook, which is provided with a horn, the purpose of which is to contact with the log when the latter has been turned and cause the disengagement of the hook, and, thirdly, in providing each steam-cylinder with a steam-chest and connecting each valve-stem with a quadrant upon the rock-shaft, whereby the respective valves may be centered independently of each other.

Figure 1 of the drawings is a perspective view of a machine embodying my improvements. Fig. 2 is a front elevation of the hook-arms and their hub. Fig. 3 is a perspective view of one of the recessed collars. Fig. 4 is a side elevation of the hook.

In the drawings, A is the mill-floor, upon which the machine is set; B, the logways, only one of which is shown; C, the rock-shaft, mounted in pillow-blocks *c*; and D the carriage head-blocks, only one being shown.

E E are the push-arms, keyed or otherwise rigidly secured on the rock-shaft C. On one of these arms there is formed a quadrant *e*, for a purpose which will be explained farther on. As will be seen, the quadrant is slotted annularly, as at 1, and also peripherally, as at 2. Inside of the annular slot is placed a metal block 3, as seen in Fig. 2, which is adjustably secured therein by means of bolt 4, passed through a washer 5 and provided with nut 6. This quadrant is shown and described in my former application, above alluded to, as a separate casting secured on the rock-shaft.

F F are the hook-arms. Instead of forming these arms separate and rigidly securing them upon the rock-shaft C, as I have done heretofore, I now cast them integral with a hub *f*, having a projecting lug 7 on each end, and integral with the hub there is also cast a quadrant *e*, in all respects similar to the one on one of the push-arms above described. I mount this hub loosely on the rock-shaft C between two collars G, keyed on the shaft, with the lugs on the hub lying within recesses *h*, cut in the inner end of the collars. As will be seen in the drawings, these recesses *h* in the collars are of considerably greater width than the lugs 7 on the hub, and the collars are so adjusted on the shaft that when the hook-arms are down in the position of rest the upper walls of the recesses will bear upon the upper edges of the lugs.

In the upper ends of the hook-arms F is pivoted the hook H, which when down rests on a block *h*, secured between the arms. The butt of the hook is bifurcated, and each branch is separately pivoted to its respective arm F. On each branch of the hook-butt there is formed an outwardly-projecting lug 9, which lugs ride freely over the upper rounded ends of arms F when the hook is canted forward to engage with the log, but contact with the backs of said arms when it is thrown up into the reaching position, thereby preventing the hook from being tilted over backward by any sudden jar. For the

purpose of causing the hook to disengage itself from the log when the latter has been turned to the desired position, I provide it with a horn h' , in front of and preferably in line with the hooked portion h^2 . As will be seen in the drawings, the horn is somewhat shorter than the hooked portion and has a blunt end, which, on coming in contact with the log, will cause the hooked portion to be lifted out of engagement with the latter.

I represents the lifting-bars, pivoted at their rear ends to stands I' , the forward ends of the bars resting on cams J , keyed on the rock-shaft C .

K K' are two oscillating steam-cylinders connected, respectively, with two steam-chests L L' by suitable pipes 10 11 and 12 13, as seen in full and dotted lines. The piston-rod M of cylinder K is pivoted to one of the push-arms E , and the piston-rod M' of cylinder K' is pivoted to the hook H at 14, eccentric to the pivotal points of the hook to its arms.

N N' are the valve-stems of the engines, each of which is made in two pieces, these being connected by a right-and-left screw-threaded sleeve n , as seen in the drawings, and each stem is provided with a T-head 15, which lies horizontal in the annular slot in one of the quadrants e , the stem N connecting with the quadrant on the push-arm and the stem N' connecting with the quadrant on the hub of the hook-arms.

O is a shaft located underneath the mill-floor, to one end of which is pivoted the operating-lever P , which extends upward through the floor, and on the other end of this shaft there is rigidly secured a crank O' , to which is pivoted one end of a rod Q , which passes up through the floor, and is pivoted at its other end to an arm R' , secured on the valve-stem N' .

On the valve-stem N is secured another arm R , similar to the one on stem N' , and to this arm is pivoted one end of a rod S , whose other end is pivoted to one arm of a bell-crank T , underneath the floor. Another rod U is pivotally connected to the other arm of this bell-crank and to the operating-lever P .

The operation of my machine is as follows:

The first thing to be done is to provide for cutting off the steam. To do this I first turn the rock-shaft C so that the quadrants e will be down and the T-heads of the valve-stems at the forward ends of the slots i , after which I center the valves by lengthening or shortening the valve-stems by means of the sleeves u . I next turn the push-arms and the hook-arms up as far as it is desired to have them go, each set separately, and then adjust the quadrant-blocks f against the T-heads of the valve-stems. Now assume that the rock-shaft C is turned so as to bring the cams, the push-arms, and the hook-arms into a horizontal position, with the hook down between its arms, and that a log rests upon the logways B and over the lifting-bars I , when, as will be evident from the foregoing description, all the

valve-ports will be closed. The operator (who for convenience of description is presumed to be facing the log) now pushes lever P to the right, which movement, in an obvious manner, opens one of the valve-ports in the steam-chest L and admits steam through the pipe 11 to the rear end of cylinder K , forcing its piston and piston rod forward and rocking shaft C forward, when the cams will raise the lifting-bars and thus lift the log clear of the logways, by which time the push-arms will bear against the log and push it onto the head-blocks of the carriage, the arms continuing to swing forward for that purpose until the quadrant reaches a position to cause the valve-stem to center the valve and throw lever P back to its normal position. While this movement of the push-arms to place the log upon the head-blocks is going on, however, the operator pushes lever P forward, which works shaft O forward, and thus opens one of the ports in steam-chest L' and admits steam through pipe 12 to the rear end of cylinder K' , forcing its piston and piston-rod forward, thereby raising the hook-arms and throwing the hook up into a position to engage with the log at any desired point in its circumference, when he immediately reverses the lever to open the other port in steam-chest L' and admit steam through pipe 13 to the front end of cylinder K' , which results in drawing the hook down onto the log, and then, as the hook is at the same time being drawn backward, the log, resting against the lifting-bars and push-arms, will be turned to the desired position, by which time, the hook no longer having a hold upon the log, the hook-arms and hook will fall back to their normal positions. The operator now pushes lever P to the left, and thereby admits steam through pipe 10 to the forward end of cylinder K and rocks shaft C and its attached push-arms and cams back to their normal positions of rest.

Thus far the description applies to a round log; but we will now assume that a slab has been cut and it is desired to turn the log for another cut. The operator in this case first admits steam to cylinder K' behind the piston, which drives its piston-rod forward and raises the hook and hook-arms, and as the lugs on the hook-arms engage with the collars on the rock-shaft the latter is turned, thereby raising the push-arms, the cams, and the lifting-bars. He then reverses the action of the piston in cylinder K' , which draws the hook down onto the log and rearward, thus turning the log, the hook-arms meanwhile turning backward loosely on the rock-shaft, and then when the log has been turned the hook will leave it and the hook-arms and hook will drop to the position of rest. Next he admits steam to the rear end of cylinder K , rocking shaft C forward, raising the log and pushing it back into place upon the head-blocks, and finally he rocks shaft C back into position of rest.

Having thus described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. In a log lifting and turning machine of the class described, the combination, with the 5 rock-shaft bearing rigidly-attached cams and push-arms, mechanism for rocking the shaft, and pivoted lifting-bars operated by said cams, of a hook-carrier loosely mounted on the rock-shaft, stops for limiting the move- 10 ments of the hook-carrier, and mechanism for turning said carrier upon the shaft and operating the hook, substantially as described.

2. In a log lifting and turning machine of the class described, the combination, with the 15 rock-shaft bearing rigidly-attached cams and push-arms, mechanism for rocking the shaft, and pivoted lifting-bars operated by said cams, of two recessed collars rigidly fixed on the rock-shaft; two hook-arms joined at their 20 lower ends to a hub loosely mounted on said shaft between the collars, the hub having lugs resting in the recessed portions of the collars, a hook pivoted between the upper ends of the hook-arms, and mechanism for 25 turning the hook-arms upon the shaft and operating the hook, substantially as described.

3. In a log lifting and turning machine of the class described, the combination, with the rock-shaft and a hook-carrier mounted on said shaft, of a hook having a horn on its 30 curved end, and mechanism for operating the hook, for the purpose set forth.

4. The combination, with the rock-shaft bearing rigidly-attached cams and push-arms and a loosely-mounted hook-carrier, and piv- 35 oted lifting-bars operated by said cams, of two steam-cylinders, each having a piston-rod, one pivoted to the hook and the other pivoted to one of the push-arms, a steam- 40 chest for each cylinder, provided with an adjustable valve-stem, two quadrants upon the rock-shaft with which the valve-stems are connected, and lever mechanism for operat- 45 ing the valve-stems, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FLAVEL SIMONSEN.

Witnesses:

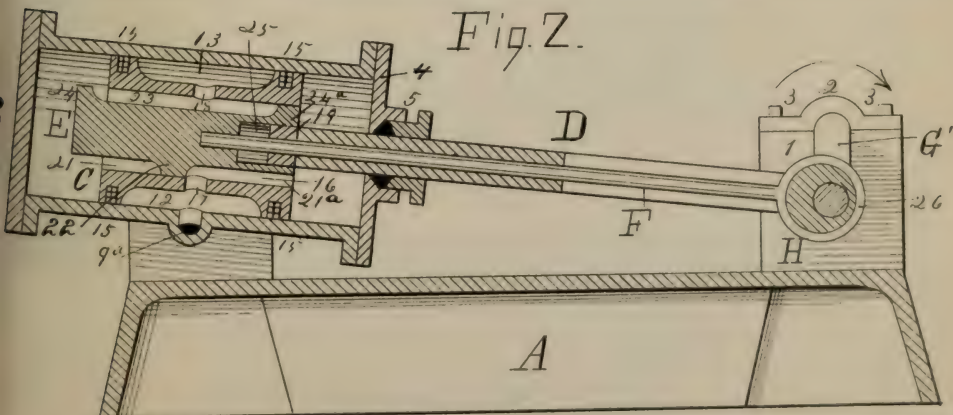
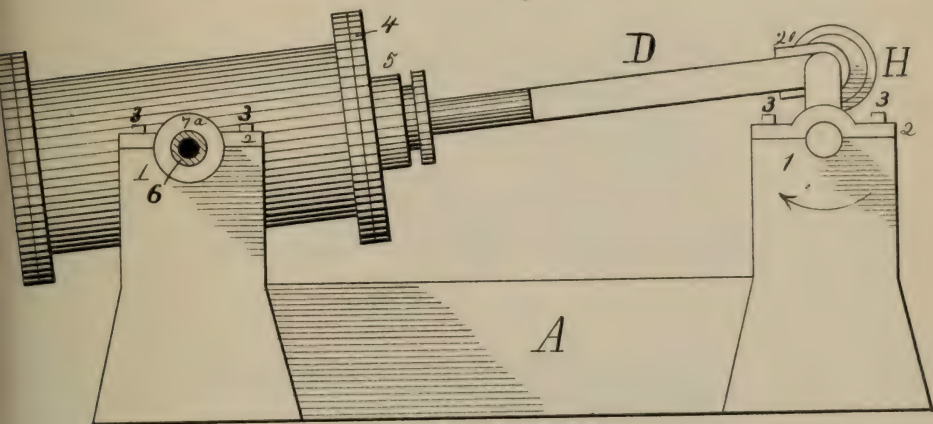
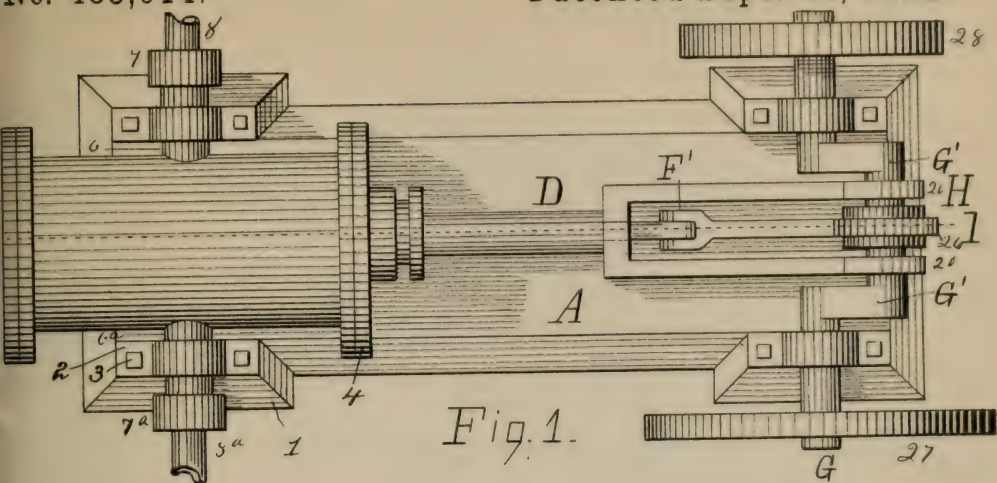
E. Q. NYE,

PERLEY PITKIN.

J. W. POWERS.
STEAM ENGINE.

No. 483,014.

Patented Sept. 20, 1892.



Witnesses

Walter Tammes
Chas. J. Stockman.

Inventor

Jay W. Powers

J. W. POWERS.
STEAM ENGINE.

No. 483,014.

Patented Sept. 20, 1892.

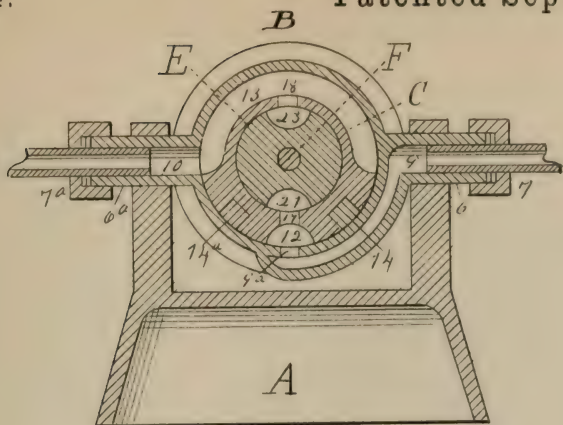


Fig. 4.

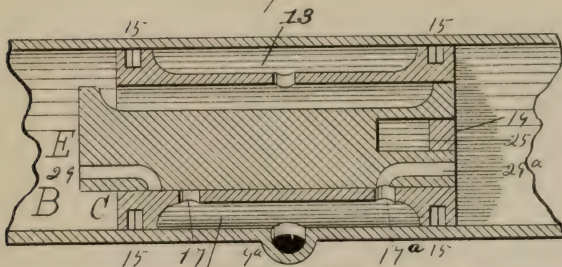


Fig. 5.

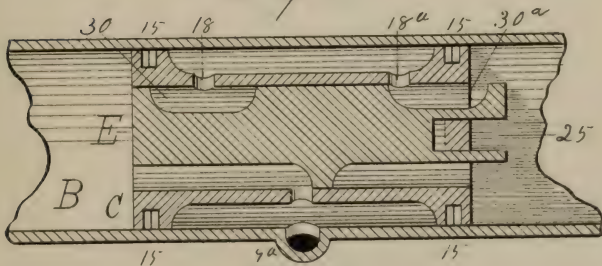


Fig. 6.

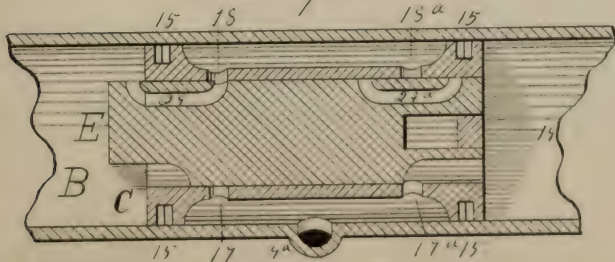


Fig. 7.

Witnesses

Chas. J. Stockman

Inventor

Jay W. Powers

221 UNITED STATES PATENT OFFICE.

JAY W. POWERS, OF CHICAGO, ILLINOIS.

STEAM-ENGINE.

SPECIFICATION forming part of Letters Patent No. 483,014, dated September 20, 1892.

Application filed April 9, 1892. Serial No. 428,503. (No model.)

To all whom it may concern:

Be it known that I, JAY W. POWERS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Steam-Engines, of which the following is a specification.

This invention relates to steam-engines, and has for its object the production of an engine of the character known as "reciprocating piston," in which, first, many of the parts heretofore deemed essential to the practical operation of engines of this character are dispensed with, thereby materially simplifying its construction and materially lessening its cost; second, the boiler-pressure upon the piston and the first expansion of the steam within the cylinder is secured, thereby receiving the full force of the steam upon the part whereby it may best be utilized; third, both the valve and piston will receive and both will transmit the power of the steam to the crank-shaft, thereby utilizing the power at present employed in actuating the valve or valves, and, fourth, the steam will be admitted to the cylinder in such manner that the piston and valve will be balanced and their gravity overcome.

To these ends the invention consists in certain peculiarities in the construction, arrangement, and combination of the several parts, substantially as hereinafter described, and particularly pointed out in the subjoined claims.

In the accompanying drawings, Figure 1 is a top plan view of the entire engine; Fig. 2, a side elevation with the balance-wheel and driving-pulley removed. Fig. 3 is a longitudinal vertical section from I to I. Fig. 4 is a vertical cross-section through the trunnions, and Figs. 5, 6, and 7 longitudinal vertical sections of modified forms of the piston and valve.

Throughout the several views the same reference letters and figures refer to the same parts.

A is the bed or frame; B, the cylinder; C, the piston; D, the piston-rod; E, the valve; F, the valve-stem; G, the crank-shaft; G', the crank, and H the eccentric.

The cylinder B, piston C, and valve E should be made of the same material, in order that

their contraction and expansion due to changes in temperature will be uniform.

The bed or frame A may be of any desired form of construction, but should be of sufficient weight to break the vibrations of the working parts, thereby giving the engine stability. It is provided with the four pillow-blocks 1, having the caps 2 held in place by the bolts 3. Two of these pillow-blocks are formed to provide bearings for the trunnions of the cylinder, and the other two support the crank-shaft G.

The cylinder B is provided with the heads 4, one of which is furnished with the stuffing-box 5. It is also provided midway between its opposite ends and on its opposite sides with the trunnions 6 6^a, having the stuffing-boxes 7 7^a, which render steam-tight the supply and exhaust pipes 8 8^a entering them. Opening into one of these trunnions 6 is the upper horizontal end of a passage 9, the remainder of said passage extending downward in a curvilinear course a quarter of a circle through the wall of the cylinder B (which is made thicker at this point for the purpose) and its inner end communicating with the interior of the cylinder through a port 9^a, the whole forming a supply-passage for the steam. The other trunnion 6^a has the passage 10 extending through it horizontally, piercing the side wall of the cylinder B, thus forming an exhaust-passage for the steam.

The piston C is a little more than half as long as the cylinder B and is provided upon its supply (under) side with the longitudinal groove 12, which is at all times in communication with the supply-passage 9, and upon its exhaust (upper) side with the semi-annular longitudinal groove 13, at all times in communication with the exhaust-passage 10. It is also provided with the longitudinal packings 14 14 and with the annular packings 15 15, and finally it is provided with the central longitudinal chamber 16, communicating with the longitudinal groove 12 through the supply-port 17 and with the semi-annular groove 13 through the exhaust-port 18.

The piston-rod D is attached to the horizontal cross-bar 19 of the piston C and passes out through the stuffing-box 5, where after (providing for its stroke) it is divided into two

parallel bars, which extend to and are connected with the crank H by means of the strap-joints 20. Its cylindrical or single portion is pierced longitudinally to provide a passage for the valve-stem F.

The valve E is a little longer than the piston C, the purpose of which will hereinafter be seen. It is fashioned to fit within the central chamber 16 of the piston C closely and yet be movable longitudinally therein. It is provided upon its supply (under) side with the two longitudinal grooves 21 21^a, extending inward from its opposite ends, their approaching (inner) ends being separated by the central wall 22, and upon its exhaust (upper) side with the longitudinal groove 23, extending nearly its entire length, but stopped off by the end walls 24 24^a. Its forward end is provided with a recess 25, which permits it to pass outward and beyond the horizontal cross-bar 19 of the piston C.

The valve-stem F is attached to the center of the valve E, passes out through the pierced piston-rod D, and extends to and is connected with the eccentric H by the eccentric-strap 26. It consists of two parts coupled together outside the tubular portion of the piston-rod D by means of the knuckle-joint F'. It should be provided with a stuffing-box at the outer end of its tubular passage to render it steam-tight; but I do not deem it necessary to show said stuffing-box in my drawings.

To one of the outer ends of the crank-shaft G is attached the balance-wheel 27, and to the opposite end thereof the driving-pulley 28. The eccentric H is also rigidly attached to the crank G', between the outer divided end of the piston-rod D and in line with the valve-stem F, but is adjustable thereon, its adjustment being an important matter, as its position in relation to the throw of the crank G' determines the point at which the live steam is cut off and the distance traveled by the piston on expansion. Its proper position is about ninety degrees in lead of the crank G'—that is to say, when the crank is at its upward throw (the position shown in Fig. 2) the throw of the eccentric should be outward, and when the crank is at its downward throw (the position shown in Fig. 3) the throw of the eccentric should be inward. Thus set the crank G' will revolve in the direction indicated by the arrows and the engine will run forward; but it is obvious that the simple reversal of its position upon the crank will cause the latter to revolve in an opposite direction to that indicated and the engine will then run backward.

The operation of my engine is as follows: Steam generated in a suitable boiler is conducted to the cylinder B through the supply-pipe 8, traverses the supply-passage 9 of the trunnion 6, and passing through the groove 12 and the port 17 of the piston C and the groove 21^a of the valve E enters the outer end of the cylinder B, forcing the piston C and valve E inward, the exhausted steam in the in-

ner end of the cylinder B meanwhile escaping through the groove 23 of the said valve E, the exhaust-port 18, and the groove 13 of the said piston C, the passage 10 of the trunnion 6^a, and the exhaust-pipe 8^a. Now through this inward stroke of the piston and valve the crank G' has been carried around to its inward and the eccentric H (thereunto attached) to its upward throw. At this position the supply-port 17 and the exhaust-port 18 are both closed by the central wall 22 and the end walls 24 24^a of the valve E, and the momentum of the balance-wheel 27 must now carry the piston and valve past their dead-center, when, through the eccentric H being in lead of the crank G', the valve moves outward a short distance within the piston, thereby bringing the port 17 of the piston C and the groove 21 of the valve E into register, and at the same time opening the port 18 of the piston C by carrying the end wall 24^a of the valve E outward and beyond the piston C, thereby letting the supply-steam into the inner end of the cylinder B, which forces the piston and valve outward and at the same time allows the exhausted steam in the outer end of the cylinder B to escape through the groove 23, port 18, groove 13, passage 10, and pipe 8^a, as above described.

In the modification shown in Fig. 5 I have two ports 17 17^a on the supply (under) side of the piston C as substitutes for the one port 17 and have two ducts 29 29^a on the supply (under) side of the valve E as substitutes for the grooves 21 21^a. (Shown in Fig. 3.)

In the modification shown in Fig. 6 I have two ports 18 18^a on the exhaust (upper) side of the piston C as substitutes for the one port 18 and have two longitudinal grooves 30 30^a on the exhaust (upper) side of the valve E as substitutes for the one groove 23. (Shown in Fig. 3.)

In the modification shown in Fig. 7 I have two ports 17 17^a on the supply (under) and two other ports 18 18^a on the exhaust (upper) side of the piston C as substitutes for the supply-port 17 and the exhaust-port 18 and have two ducts 29 29^a on the exhaust (upper) side of the valve E as substitutes for the groove 23. (Shown in the drawings.)

From the above the advantages of my invention will readily be seen and appreciated by those familiar with steam-engines.

It will be noted that by having the valve chambered within and forming a part of the piston, both receiving and both transmitting the power of the steam to the crank-shaft, I utilize to drive the latter the power at present employed in actuating the valve or valves. It will be still further noted that as the steam is admitted through the lower side of the cylinder and always against the grooved lower side of the piston the piston and valve are balanced by its upward pressure, thus overcoming their gravity, and also that by dispensing with the guides and cross-head I simplify construction and reduce friction.

In short, an engine constructed after the plan above specified and now in use has developed a higher rate of speed and a greater percentage of power than has heretofore been deemed attainable.

Changes in the details of construction other than those above described may suggest themselves to the skilled mechanic, and therefore I do not wish to be understood as limiting myself to the exact construction herein shown and described, but reserve to myself the liberty of changing the details without departing from the spirit and intent of my invention.

Having now described my invention, what I believe to be new, and desire to secure by Letters Patent, is—

1. The combination, in a steam-engine, with the cylinder having inlet and outlet ports and passages and a longitudinally-chambered piston-head within said cylinder having inlet and outlet ports, of a longitudinally-grooved valve operating within said piston-head and with but in advance of the same and a shaft connected both with said piston-head and valve, substantially as described, whereby both the piston-head and valve will be acted upon by the steam and both transmit motion to said shaft, as specified.

2. The combination, in a steam-engine, with the cylinder having entrance and exit ports, a tubular piston-rod, and a valve operating within the chamber in said piston-head and having its rod extending through said piston-rod, of a crank-shaft, to the crank portion of which the outer end of said piston-rod is connected, and an eccentric mounted on the crank

portion of said crank-shaft and having the outer end of the valve-rod connected to it, said eccentric being mounted on said crank so as to be in lead of the throw thereof, substantially as described, and for the purposes specified.

3. The combination, in an engine, with the oscillating cylinder having hollow trunnions, one of which forms the entrance and the other the exit-port for the steam, said cylinder also having passages, one leading from the entrance-port and the other to the exit-port, and its inner wall pierced to form a port leading from its entrance-passage to its interior, of a chambered piston-head operating within said cylinder and having suitable steam passages and ports, a longitudinally-grooved valve within said piston-head, and a crank-shaft connected with and operated by said piston and valve.

4. The combination, in a steam-engine, with the cylinder having inlet and outlet ports, of a longitudinally-chambered piston-head within said cylinder, said piston-head having exterior steam-passages always in communication with the inlet-port of the cylinder and also having entrance and exit ports, a longitudinally-grooved valve within said piston-head, and a shaft to which said piston-head and valve are independently connected, substantially as described, and for the purposes specified.

JAY W. POWERS.

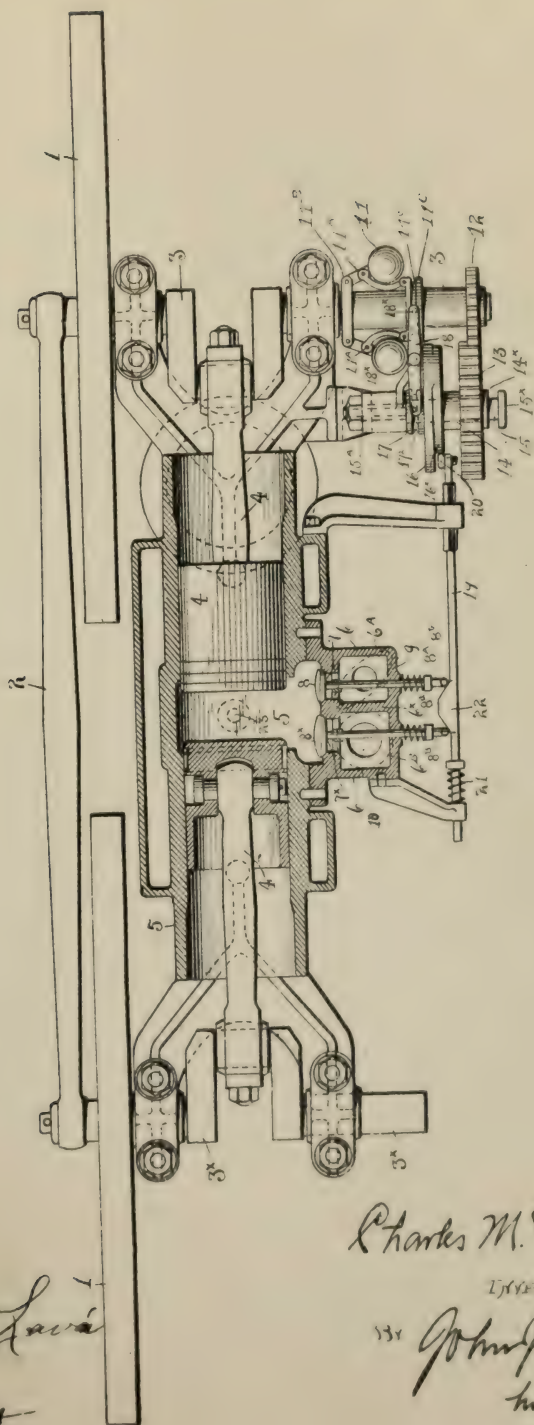
Witnesses:

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C. M. RHODES.
GAS ENGINE.

No. 531,861.

Patented Jan. 1, 1895.



Charles M. Rhodes

INVENTOR

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Witness:

Michael Lavin
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UNITED STATES PATENT OFFICE.

CHARLES M. RHODES, OF WAYNE, PENNSYLVANIA.

GAS-ENGINE.

SPECIFICATION forming part of Letters Patent No. 531,861, dated January 1, 1895.

Application filed March 17, 1894. Serial No. 504,068. (No model.)

To all whom it may concern:

Be it known that I, CHARLES M. RHODES, of Wayne, in the county of Delaware and State of Pennsylvania, have invented certain new and useful Improvements in Gas-Engines, of which the following is a specification, due reference being had to the accompanying drawing, forming a part hereof.

My invention relates generally to engines, and specifically to a construction of engine best adapted for the use of gas, oil or the like in generating and transmitting power, and has special reference to certain novel features of construction and operation in a preferred horizontal design or form of engine hereinafter fully described, to the end that the same shall be cheap and simple in construction, economic in operation and reduce to a minimum all frictional wear of the parts.

In the drawing I have shown so much of a gas-engine embodying my invention as is necessary to illustrate the construction and operation of the same, the view being a plan sectional one taken as to the central longitudinal axis of the engine.

Referring now to the drawing in which the several parts are indicated by numerals, similar numerals denoting like parts wherever found, 1 1 is a pair of fly or driving-wheels and 2 the driving arm connecting the same and working them in unison; the former properly mounted on respective crank-shafts 3, 3^x suitably journaled in proper bearings therefor. Connected to these crank-shafts are pistons and piston-heads 4, 4, working simultaneously in opposite ends of a cylinder 5,—that is to say, making in and out strokes together. Midway the extent of this cylinder 5, at one side thereof, is a jacket 6 divided by a partition 6^x forming two compartments or chambers 6^a 6^b, and having two port or valve openings 7, 7^a in communication with the chamber of the cylinder 5 each provided preferably with a puppet valve 8, 8^x mounted for end to end movement only; and further provided on its under surface or bottom with two ports 9, 10, respectively in open communication with the respective chambers 6^a 6^b of said jacket 6. The stems 8^a 8^b of the valves 8, 8^x, extend beyond the jacket 6 after passing through its respective chambers, and

on their outer ends are preferably provided with springs and rollers 8^a 8^b all for purposes hereinafter fully explained.

A high-speed-governor 11 is suitably mounted by means of toggle-connections 11^a with a pair of collars 11^b 11^c on a crank-shaft 3—the collar 11^c provided with an annular groove 11^d. The outer end of the said shaft 3 is provided with a cog-gear 12 meshing with another cog-gear 13 (the gearing being preferably in two to one relation as to diameter) mounted on a sleeve 14 working on a pin or arm 15 adjacent to said crank-shaft 3. The sleeve 14 is further provided with a double cam-wheel 16, 16^x and a collar 17 provided with a groove 17^x, while the pin 15 is provided with a head 15^x at its outer end and a jam-nut 15^a at its opposite end, the gear 13, sleeve 14, cam-wheel 16, 16^x and collar 17 being preferably made in one casting, and when mounted on the pin or arm 15, which is stationary, has endwise play between the head 15^x and nut 15^a of said arm 15, for a purpose presently made clear.

18 is an arm having a pin or stud 18^x 18^x at each end working respectively in the grooves 11^c and 17^x in the periphery of the collars 11^c and 17; said arm 18 being pivotally mounted and fulcrumed between said collars for a purpose to be explained.

The cam-wheel 16, 16^x is double in construction, so to speak, that is to say, two cams in one integral structure, one of said cams 16 having an even periphery, while the other cam 16^x has an uneven or irregular shaped periphery or face that at one point thereof merges and becomes flush with the periphery of its component part 16, for a reason hereinafter more fully set forth.

Mounted horizontally in suitable bearings adjacent to the valve-stems 8^a 8^b and cam-wheel 16, 16^x, is a rod or shaft 19, provided at one end with a roller 20, kept in contact with the cam 16, 16^x by a spring 21 at the opposite end of the rod or shaft. This roller shaft 19 is further provided with a cam 22, preferably of a construction having a flat top and inclined sides, working in conjunction with the valve-stems 8^a 8^b to raise and lower the same to open and close the valves.

23 indicates igniting means of any preferred

construction adapted to timely explode a charge of gas or the like at the completion of the compression of the gas.

Having now described the several component parts of an engine constructed in accordance with my invention, the operation is as follows:

To take in a charge of gas, the pistons being at the center of the cylinder and all the parts in position represented in the drawing, and the port 9 in connection with a source of gas-supply, a turn is given the driving-wheels 11 which rotate the crank-shafts 3 3^x and component parts and draw the pistons to the respective ends of cylinder 5, the roller 20 on the rod 19 sinking into a low depression on the periphery of the part 16^x of the cam-wheel as the latter slowly rotates, and the rod 19 is moved toward the cam-wheel 16, 16^x by the action of its spring 21. This forward movement of the rod 19 causes the valve-stem 8^a of the mixing chamber 6^a of the jacket 6 to ride the cam 22 on the rod 19 and open the valve 8, the gas flowing through the port 9 into the chamber 6^a and thence through the open valve 8 to the piston or compression-cylinder 5. Simultaneously with this action the rotating parts are increasing in momentum and the roller 20 in turn travels up a presented inclined periphery of the cam-portion 16^x, pushing backward the rod 19 and permitting the gradual closing of the valve 8 as the rod-cam 22 moves away from the valve-stem 8^a and the latter descends the inclined side of said cam 22 until the valve is closed. At this time the pistons will have reached the respective ends of the cylinders 5 and completed the outer or first stroke, the charge of gas has been taken in and all port connections with the piston cylinder closed, while the governor 11 will have greatly increased in speed, whereupon the pistons immediately commence their inward, second or compression stroke. The governor 11 as its speed increases gradually opens or spreads its ball-ends, and in so doing lifts or draws backward on the shaft 3 the collar 11^c, and this by reason of its toggle-connection 11^a therewith. This action of the governor on the collar 11^c in the groove 11^c whereof works one end of the pivoted fulcrumed arm 18, causes the opposite end of said arm 18 which works in a groove of the collar 17 on an adjacent arm 15 to move forward on said arm the collar 17, cam-wheel 16, 16^x, sleeve 14 and gear 13 until the boss 14^x reaches the head 15^x of said arm 15. During this operation the roller 20 has slowly reached the highest point on the periphery of the cam-portion 16^x, which as stated, is flush with the periphery of the cam-portion 16, and by reason of the high speed now attained by the governor and the consequent moving through the fulcrum connection 18, of the parts mounted on the arm 15,—the roller 20 is caused to mount or travel toward the periphery of the said cam-portion 16. At this time the pistons have completed their inner or sec-

ond stroke and the act of compression is completed and ignition or explosion now takes place causing the pistons to quickly make their next outer or third stroke and so imparting increased momentum to the rotating parts and the driving-wheels 11, and the power so derived transmitted thence in the usual manner. As stated, at the time of the completion of the act of compression, the roller 20 had about reached the highest periphery of the cam 16^x. The explosion and consequent increased momentum so imparted, speeds the governor 11 and causes it to complete its full action on the several parts through the medium of the fulcrum 18 as previously stated, whereupon the roller 20 will mount and travel on the periphery of the cam-portion 16, thus moving backward the rod 19 and causing the valve stem 8^a to travel the cam 22 on said rod, as the latter moves under the same, and open the exhaust-valve 8^x and the pistons have now completed their third stroke. The speed of the governor now decreases as the force of the power generated by the explosion diminishes, allowing the parts to gradually return to their first positions—the pistons making their next inner or fourth stroke exhausting the exploded gas through the valve 8^x, chamber 6^b and exhaust-port 10, at the completion of which stroke the waste gas will be exhausted from the cylinder 5, the exhaust valve 8^x closed and all the parts again in position to take in a charge of gas and repeat the operation of mixing, compressing, igniting or exploding and exhausting charges of gas or the like for the purposes hereinbefore set forth.

I desire it understood that I do not wish to restrict my invention to the exact construction of parts as shown and described, as it is obvious that many changes in detail of construction may be adopted without departing from the spirit of my invention strictly as such; and though I have herein described my invention as employing gas as a means of generating power, slight changes of construction entirely within the skill of a person skilled in the particular art of manufacture and operation of engines of the class described would adapt the same for the use of oil or other power generating medium employed in an engine.

I claim—

1. In a gas or other engine in combination with the piston cylinder, its pistons, crank-shaft and other connected gearing; mixing and exhaust chambers having supply and exhaust ports respectively and valved connection with the piston cylinder, a high-speed governor, collars on a crank-shaft rotating therewith and of which one is grooved and movable thereon, means intermediate said governor and collars for sliding the grooved-collar as the speed of the governor increases or decreases, a stationary arm mounted adjacent thereto, carrying a movable sleeve provided with a grooved-collar, a cam-wheel and a cog-

wheel, the latter meshing with a cog-wheel mounted on said shaft and rotated by the same, means intermediate said grooved-collars and in contact therewith for sliding the sleeve and its mounted parts as the speed of the governor increases or decreases, and means intermediate said cam-wheel and valves for opening and closing the valves at predetermined intervals, as and for the purposes set forth.

2. In a gas or other engine the following elements in combination: the piston-cylinder, its pistons, crank-shafts and other connected gearing therefor, mixing and exhaust chambers having supply and exhaust ports respectively and each provided with valved connection with the piston cylinder, the valve-stems whereof extend through and beyond said chambers, a high-speed governor, collars on a crank-shaft and rotating therewith, one of which is grooved on its periphery and movable on said shaft and means intermediate said governor and collars for sliding the grooved-collar as the speed of the governor

increases or decreases; a stationary arm mounted adjacent thereto and carrying a movable sleeve provided with a collar having an annular peripheral groove, a cam-wheel of the character described and a cog-wheel, the latter meshing with a cog-wheel mounted on the crank-shaft stated, and rotated by the same, a pivoted fulcrumed arm, the respective ends of which are adapted to work in the grooved-collars stated, a sliding rod, means for retaining the same in contact with the cam-wheel and provided with means adapted to act in conjunction with the valve-stems to open and close the valves stated at predetermined intervals, and means for igniting charges of gas and the like, as and for the purposes set forth.

In testimony whereof I have hereunto signed my name this 16th day of March, A. D. 1894.

CHARLES M. RHODES.

In presence of—

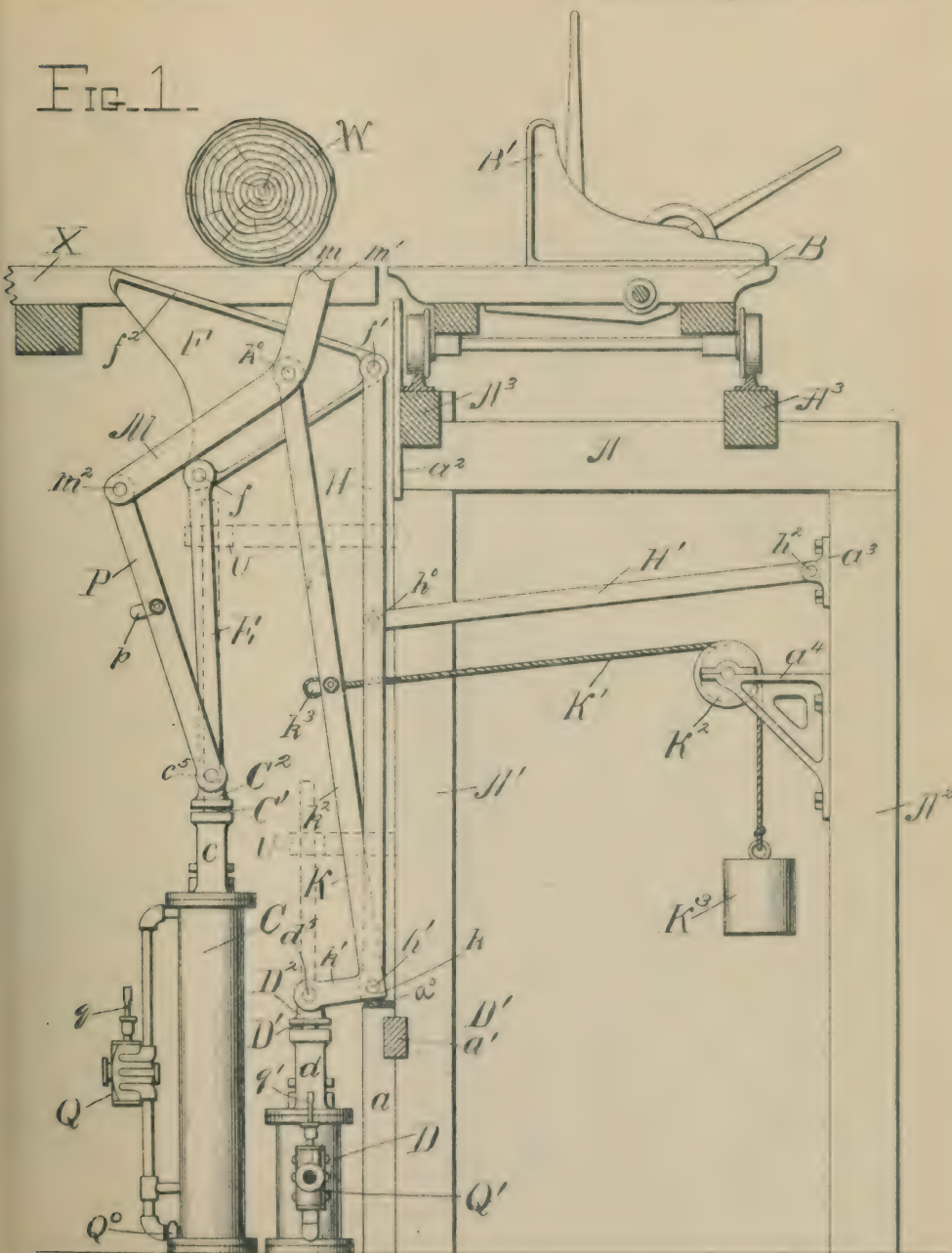
A. P. RUTHERFORD,
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STEAM LOG LOADER AND TURNER.

No. 559,192.

Patented Apr. 28, 1896.

FIG. 1.



Witnesses

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FIG. 2.

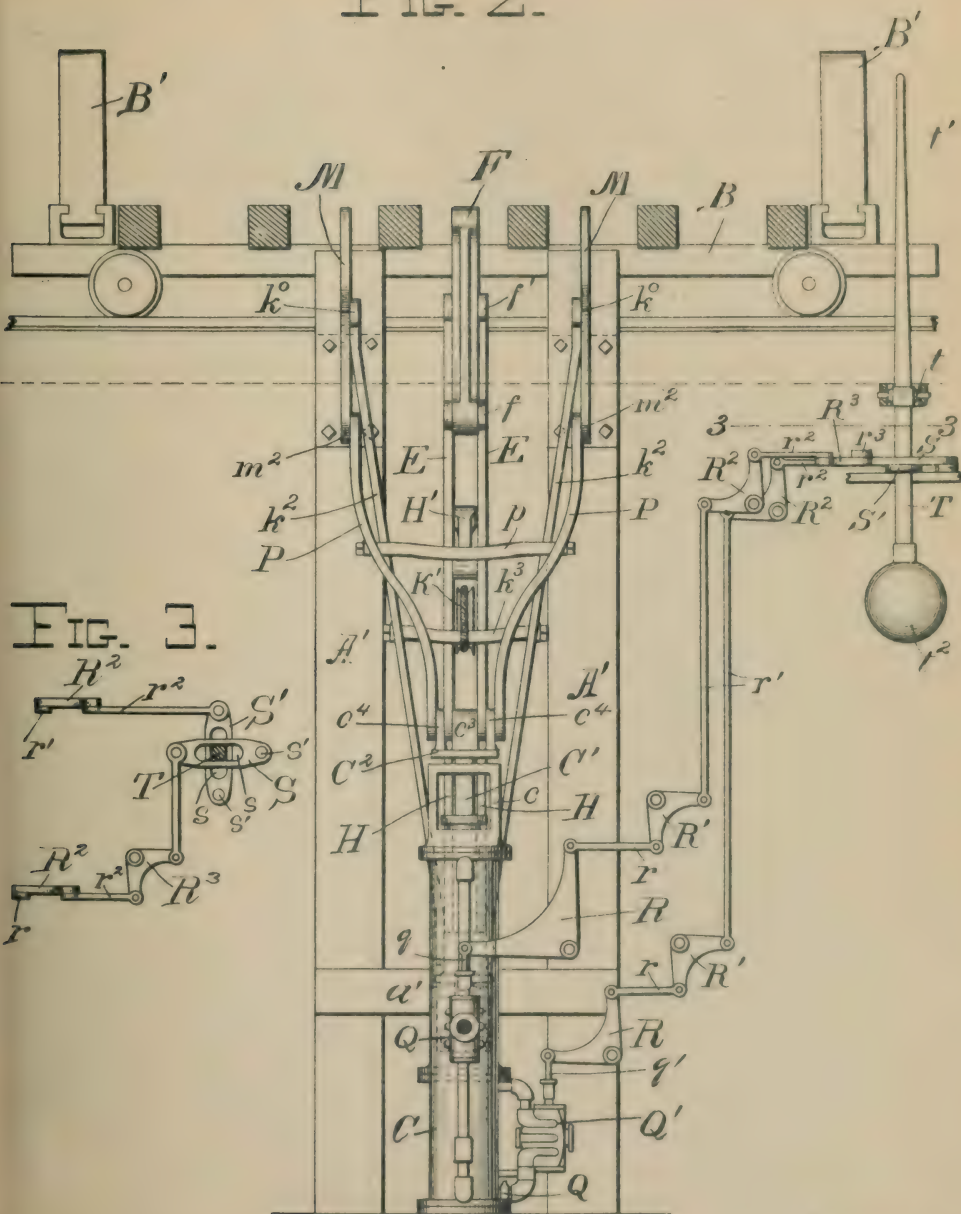
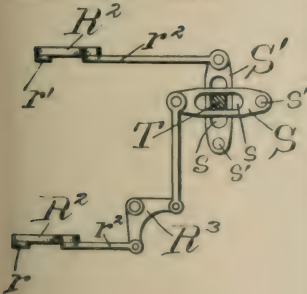


FIG. 3.



Witnesses

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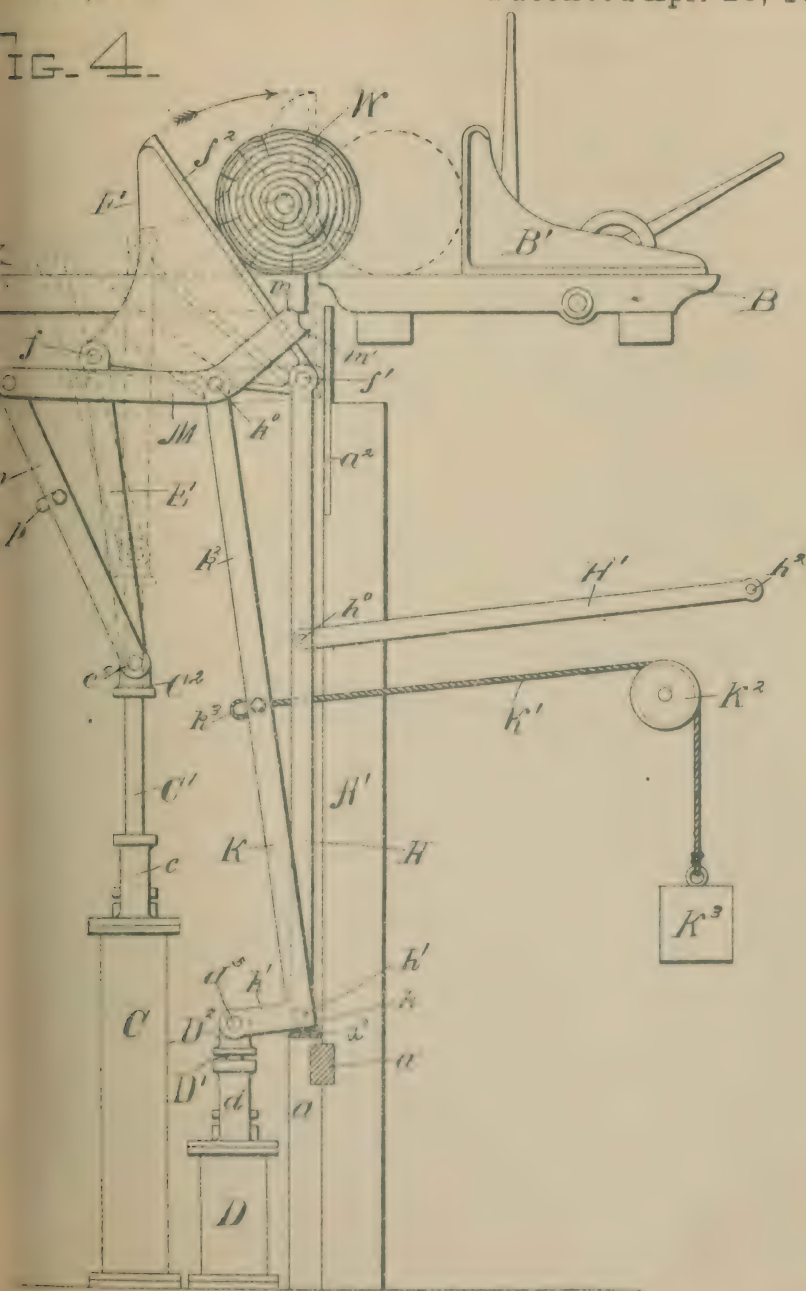
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FIG. 4.



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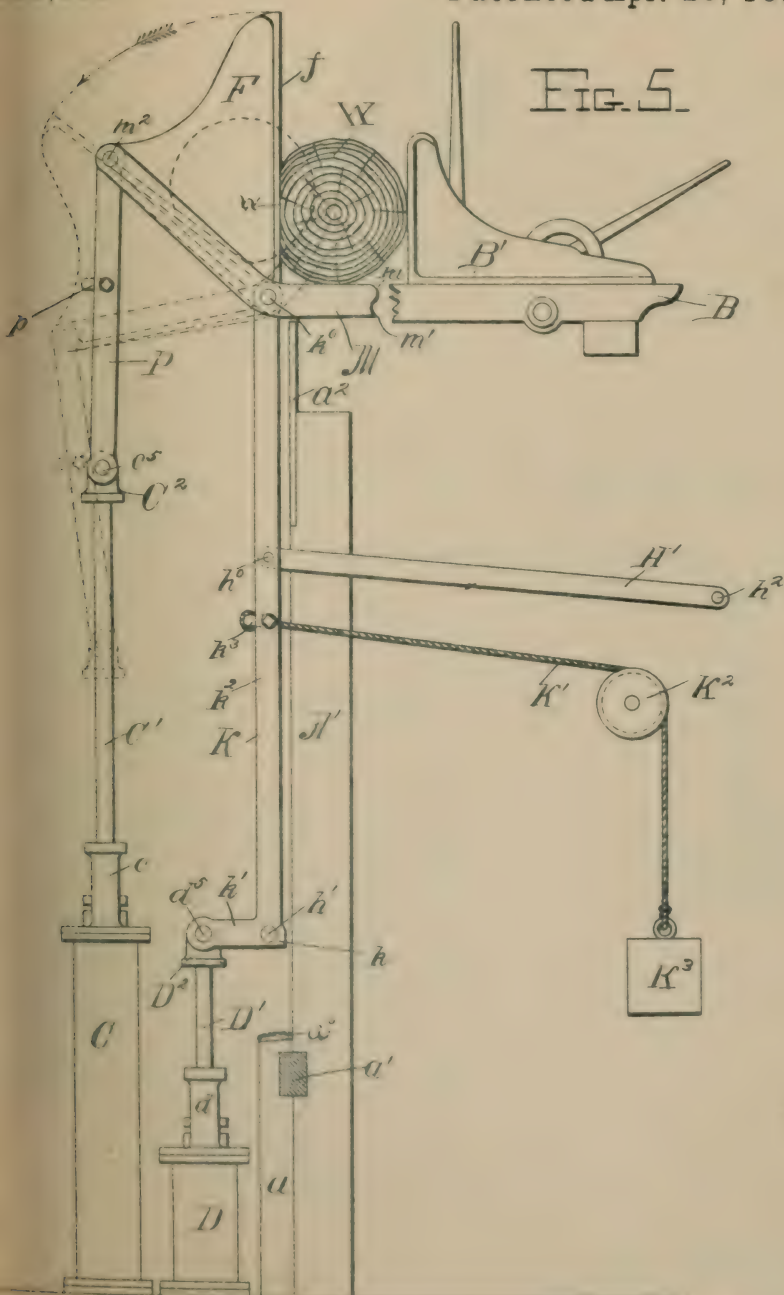
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559,192.

Patented Apr. 28, 1896.



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C. Wilson

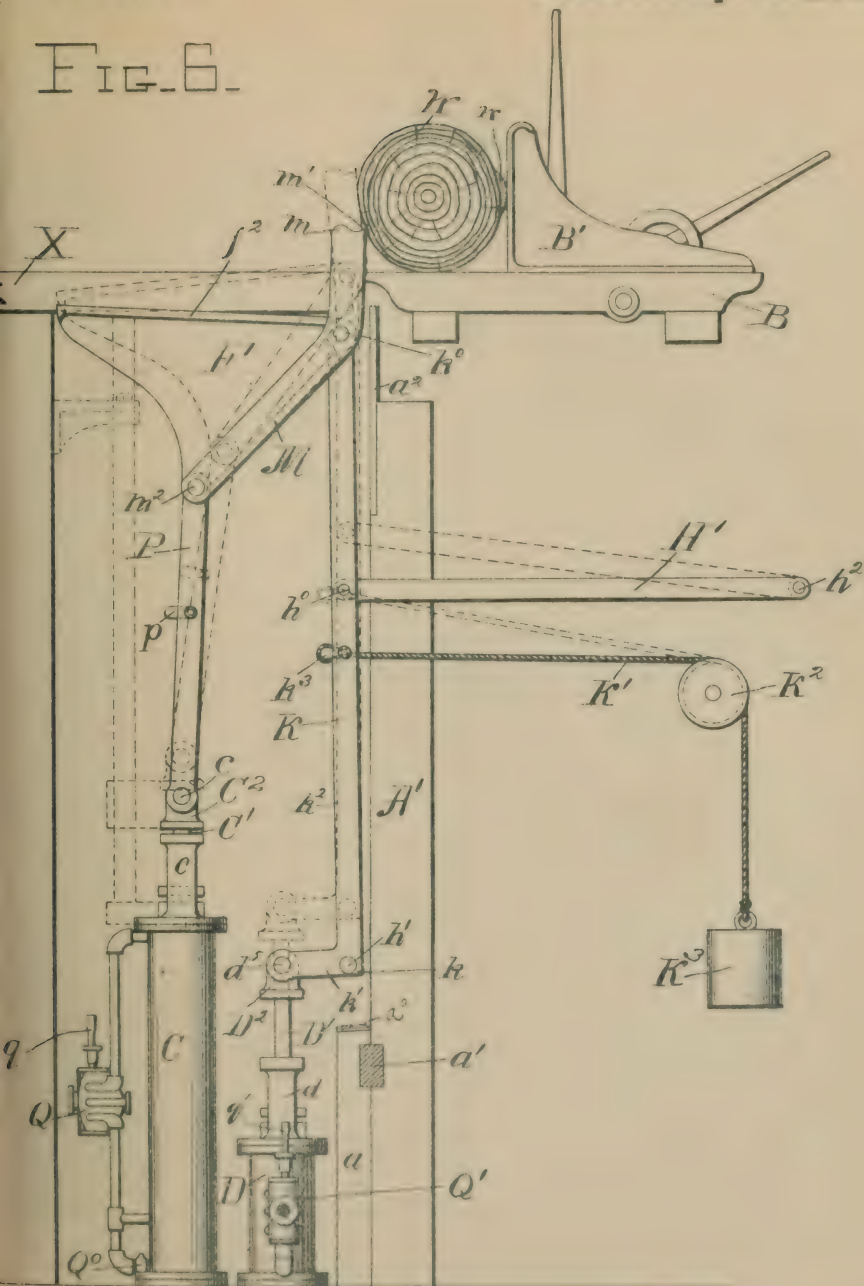
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Patented Apr. 28, 1896.

FIG. 6.



Witnesses

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PETER MCNERNEY, OF MARINETTE, WISCONSIN.

STEAM LOG LOADER AND TURNER.

SPECIFICATION forming part of Letters Patent No. 559,192, dated April 28, 1896.

Application filed November 6, 1895. Serial No. 568,101. (No model.)

To all whom it may concern:

Be it known that I, PETER MCNERNEY, a citizen of the United States, residing at Marinette, in the county of Marinette and State of Wisconsin, have invented certain new and useful Improvements in Steam Log Loaders and Turners; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in apparatus for loading and turning logs or cants on a sawmill-carriage by mechanical means.

According to this invention the log or cant is moved by a plurality of movable arms coming either separately or together into direct contact with one or more of the sides of the log or cant, whereby the log may be shoved laterally or "loaded," as it is generally termed, or the same may be lifted bodily or may be turned about its axis through any desired angle. The motive power used is preferably fluid-pressure, such as steam; but any suitable power may be adopted. Moreover, the mechanism for transmitting the required motion to the arms may be varied in many ways.

One means of carrying out the said invention is shown in the drawings, to which reference is now had.

Figure 1 represents a cross-section through a sawmill-carriage and the log-deck and shows the apparatus in elevation out of operation or in the initial position. Fig. 2 represents an end view of the apparatus as seen from the left of Fig. 1. Fig. 3 represents a detail plan view of the lever connections for operating the valves of the fluid-pressure cylinders. Fig. 4 is a diagrammatic view showing the operation of the apparatus in loading a log onto the sawmill-carriage. Fig. 5 represents a diagrammatic view of the apparatus in the operation of turning down a log that has been slabbled on one side for the purpose of presenting a fresh side to the saw; and Fig. 6 represents, diagrammatically, the manner in which the log is turned through a small angle about its axis in order to get a knot clear of the knees or head-blocks or to adjust a log so that any imperfections therein may be properly presented to the saw-line, or

for other purposes; and Fig. 7 represents a modification in which the vertical support for the pivots is connected directly to the piston-rod instead of through a bent arm and the swinging motion to the canting-arm is given by means of a spring.

The same parts are indicated by the same letters throughout the several views.

A represents the platform on which the timbers A³ are supported, which timbers carry the tracks on which the sawmill-carriage B runs. This sawmill-carriage is provided with the knees B', and the entire carriage is constructed in the ordinary or in any well-known way.

The platform A is partly supported on the uprights A' and A², between which uprights A' is or may be secured a cross-piece a', let into the timber or other support a. Near their upper ends these uprights A' are faced with stout metal plates a².

C represents a long stationary cylinder, and D a short cylinder, also stationary, parallel to the first, and preferably placed in a vertical position. Each of these cylinders is provided with upwardly-projecting guides c and d for the piston-rods C' and D', which piston-rods carry cross-heads C² and D², provided with transverse pins c⁵ and d⁵. The piston-rods C' and D' may also be provided with suitable guides to insure their working in perfect line with their respective cylinders, as indicated in dotted lines at U in Fig. 6. The cross-head C² is provided with a central tongue c³ or continuation of the piston-rod and two side tongues c⁴, spaced at a short distance therefrom, between which tongues c³ and c⁴ are pivoted the ends of the two side bars E, which are pivotally connected, as at f, to the lower outer end of the loading-arm F. This loading-arm is represented in the form of an approximately triangular plate having ribbed or flanged edges, such as f²; but this plate may be made in the form of a bent bar or bell-crank lever, constructed of any suitable material, if desired, although I prefer to have the said loading-arm in the form of a plate, in order to get the great rigidity and strength found in a deep plate, such as is shown. While I have shown two of these side bars E pivoted to the opposite sides of the plate F, a single forked bar may be used, if desired;

but in order to balance the strains I preferably use two bars, as shown.

At the forward corner of the loading arm or plate F the two vertical bars H are pivotally attached, as at f' , while the lower ends of these bars are connected by means of the pin h' to the bosses k of the bent levers K. Instead of two of these bars H, one on either side of the loading-arm F, a single forked bar may be used, if desired. The bar or bars H have pivotally connected thereto, as at h^0 , the radius-bar H' , which is pivoted at h^2 to the bracket a^3 , which bracket is secured to any convenient post, as A^2 . These bars H are held always in an approximately-vertical direction by the said radius-bar H' , the slight lateral motion of the said bars H, due to the the circular motion of the radius-bar, being immaterial and unobjectionable. Instead of the radius-bar, the bar or bars H may be arranged to move in vertical guides, if desired.

The angular levers K are provided with short arms k' and long arms k^2 , which are approximately at right angles to each other, and both turn about the pivot h' . The short arms k' are pivotally connected to the pin d^5 on the cross-head D^2 , and the longer arms are pivotally connected, as at k^0 , to the two canting-arms M. These arms k^2 are inclined outward, as shown at Fig. 2, and the canting-arms M are spaced at some distance on either side of the loading-arm F, to enable them to operate between the head-blocks or each side of any one of them on the sawmill-carriage, and also to give sufficient distance between the supports when the log is lifted, as will be hereinafter described. These arms k^2 are connected by the bent brace k^3 and a rope K' , passing over a pulley K^2 and supporting a weight K^3 , as shown at K^{30} in Fig. 7, or its equivalent spring may be used to swing the bar K to the right for quickly throwing the canting-arms beneath the saw-log, as will be hereinafter described. A timber-support a or other suitable stop, preferably faced with rubber or leather a^0 , is placed in the proper position to check the downward movement of the pivot h' , for the purpose of keeping the arms k^2 inclined backward slightly when the piston-rod D' is at its lowest position.

In the form of device shown in Fig. 7 the bar K is made straight, and together with the bar H it is pivoted directly to the end of the piston-rod D' , the swinging motion of the canting-arm being secured by the spring K^{30} , which is the equivalent of the weight K^3 , already described.

The canting-arms M are bent, as shown, and have their forward ends terminating in the rounded portion m , projecting somewhat beyond the biting edge m' , to prevent the canting-arms from gouging into the bottom face of the log or cant, or from being dulled by or cutting into the plates a^2 , as will be hereinafter described, while the rear ends of the said canting-arms are pivoted at m^2 to the bent bars P, which are connected together by

the bent brace p , and at their lower ends are pivoted on the pins c^5 of the cross-head C^2 . The free ends of the canting-arms M are preferably so adjusted as to be always at approximately right angles to the loading edge f^2 of the loading-arm F.

The cylinders C and D are adapted to cushion at the lower end of the stroke by inwardly-acting check-valves placed at Q^0 , (see Figs. 1 and 2,) and are supplied with valves Q and Q' , which are provided with valve-stems q and q' , connected by the system of bell-crank levers R, R' , R^2 , and R^3 and the connecting-rods r , r' , r^2 , and r^3 with the levers S and S' , which are slotted, as at s , and pivoted, as at s' . The said levers S and S' are set at approximately right angles to each other, as shown in Fig. 3, and are operated by the hand-rod T, which is suspended on a universal joint t , and is provided with a handle t' and with a weight t^2 . By this system of levers and by an arrangement of valves well known in the art steam or other fluid pressure may be admitted to either end of either cylinder or to one end of one cylinder and the opposite end of the other, or vice versa, and thus the motions of the pistons in the two cylinders may be regulated at will by the operator at the handle t' .

X represents the log-deck upon which the logs W are placed ready for loading onto the sawmill-carriage.

The operation of the device will now be described in detail.

Since the pistons in the cylinders C and D may be forced up or down or held up or held down by means of admitting fluid-pressure into the proper end of the cylinder, in describing the operation of the apparatus it will be more convenient to refer merely to the motion of the piston-rods, it being understood that this motion is produced in the ordinary well-known way. The various parts being in the initial position, with the log rolled near the edge of the log-deck, as shown in Fig. 1, the piston-rod C' is forced upward and the piston-rod D' is held down in the lower position, with the pivot h' resting on the timber or other support a , the parts coming quickly to the position shown in full lines in Fig. 4. The further upward motion of the piston-rod C' will force the loading-arm F around about its pivot f' , which pivot will be held fast by the radius-bar H' and the piston-rod D' , and the loading-arm will shove or roll the log toward the carriage. At the same time the nose of the canting-arms M will be lowered downward toward the plates a^2 until when the various parts reach the position shown in dotted lines in Fig. 4 the nose of the canting-arms will bear against the said plate a^2 and the log will be forced by the loading-arm against the face of the knees B' , all as shown in Fig. 4. Thus it will be seen that the canting-arms do not assist in the loading proper. The log after being loaded onto the sawmill-carriage is secured in place in the usual way

and a slab is sawed off, as shown at *w* in Fig. 5. In the meantime the loading and turning apparatus are brought back to the initial position shown in Fig. 1. Now after one side of the log has been slabbed and it is desired to work on the next face of the log the apparatus is brought to the position shown in the dotted lines in Fig. 4, as has already been described, and then the pistons *C'* and *D'* are both forced upward to the position shown in Fig. 5. The upward motion of the arms *k*² will shove the nose of the canting-arms clear of the plates *a*², when the motion of the short arms *k*¹ about the pivot *h'* will swing the end of the canting-arms rapidly between the head-blocks of the sawmill-carriage and beneath the sawlog to the position shown in Fig. 5. This rotary motion of the arms *k*² about the pivot *h'* will be accelerated by the weight *K*³ or its equivalent spring; but neither the weight nor the spring may be used, if preferred, since the upward travel of the piston-rod *D'* will tend to swing the short arms *k*¹ and also the long arms *k*² about the pivot *h'*, and the longer radius of the latter will cause a very little travel of the short arms to swing the free end of the long arms and the canting-levers carried thereby through the required distance laterally. When the parts are in the position shown in full lines in Fig. 5, keep the pressure on the piston-rod *D'* and pull down on the piston-rod *C'*, when the log will be lifted up bodily to the position shown in dotted lines in Fig. 5, and by further lowering the loading-arm *F* the log may be laid on its slabbed side on the log-deck in approximately the position occupied by the log in Fig. 1, when by lowering the piston-rod *D'* the apparatus will return to the initial position, and the log may be shoved on the timber-carriage in the manner already described by reference to Fig. 4. In a similar way a log with two sides slabbed may be turned over to have its third side slabbed, and so on until all four of the sides of the log are slabbed; or a cant placed on the sawmill-carriage may be turned over approximately ninety degrees at a time until it is revolved through ninety degrees, one hundred and eighty degrees, two hundred and seventy degrees, three hundred and sixty degrees, &c.; but it will rarely be necessary to turn the log more than ninety degrees for a fresh cut, which can be done in one operation.

It frequently becomes necessary or desirable to turn a log through a small angle on the carriage to clear a knot from the knee or from the head-blocks or to avoid an imperfection in the log or for other reasons, and this may be done in the manner shown in Fig. 6, where the log being in place on the sawmill-carriage and the apparatus being in the position shown in Fig. 1 the piston-rod *D'* is pushed upward until the biting edge *m'* catches in the log, as shown in Fig. 6. Then keep pushing upward on the piston-rod *D'* until the canting-arm reaches the position shown in dotted lines, when it will disengage itself from the log

owing to the round shape of the latter. If by this operation the knot *w* is not removed clear of the knee *B'*, the canting-arm may be drawn down again and then forced up a second time, again biting in the log and turning the same over through a small angle. In this manner a round log may be revolved through any desired angle without removing the same from the sawmill-carriage. By this method of turning the log toward the knees the bark or rough surface of the log only is engaged, and in a positive manner obviating most of the injuries due to the sharp teeth now most commonly used for this purpose.

It will be seen that this apparatus turns the log either toward or away from the knees, as may be desired. Moreover, the loading-arm operates on the log with a rapidly-decreasing motion, whereby the motion of the log slows down rapidly as it approaches the knees, while at the same time the power-arm increases, thus rendering it possible to stop the loading-arm entirely and then easily slide the log against the knees, thus avoiding accidents to the set works.

While I have shown steam-cylinders for operating the canting-arms and the loading-arm it will be obvious that any other suitable means of imparting reciprocating motion may be adopted. Moreover, it will be obvious that only one of the canting-arms may be used and two loading-arms or only a single canting-arm and a single loading-arm, or where extremely long and heavy logs are to be handled the apparatus may be duplicated at each end of the log-deck.

The herein-described mode of manipulating logs for the purposes set forth is believed to be broadly new, and it is my purpose to claim all equivalent means of accomplishing the same result in a substantially similar way.

The invention is believed to be a pioneer invention and is broadly claimed as such.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In an apparatus for turning logs on sawmill-carriages, a canting-arm pivoted mediate of its length, means for swinging the free end of said arm horizontally beneath the log on the carriage, for tilting said free end about said pivot to a vertical position, and for substantially vertically reciprocating said free end while in its vertical position and in engagement with the log, substantially as described.

2. An apparatus for loading and turning logs on sawmill-carriages comprising a loading-arm with a vertically-movable pivot therefor, and a canting-arm provided with a vertically and a laterally movable pivot, with means for moving the pivot of said loading-arm vertically and for swinging the said arm about its pivot, and means for raising and lowering the pivot of said canting-arm, for giving said pivot a distinct substantial lat-

eral movement, and for swinging the said canting-arm about said pivot, substantially as described.

3. In an apparatus for loading and turning
5 logs on sawmill-carriages, the combination with a pivoted loading-arm and means for swinging the same about its pivot, of means for moving said pivot vertically, and a canting-arm with means for moving the same per-
10 pendicularly relative to said loading-arm and for holding said canting-arm at the desired angle relative to said loading-arm while the latter is swung about its pivot, substantially as described.

15 4. In an apparatus for turning logs on sawmill-carriages, a pivoted canting-arm and means for moving said arm into a substantially horizontal position and engaging the bottom of the log on the carriage, for tilting
20 said arm on an axis substantially in the saw-line to cant the log and for reciprocating said arm substantially in the plane of the saw to rotate the log on its axis, substantially as described.

25 5. An apparatus for loading and turning logs on sawmill-carriages comprising a loading-arm with a vertically-movable pivot therefor, and a plurality of canting-arms provided with vertically and laterally movable pivots,
30 with means for moving the pivot of said loading-arm vertically and for swinging the said arm about its pivot, and means for raising and lowering the pivots of said canting-arms, for giving said pivots a substantial lateral
35 movement, and for swinging the said canting-arms about said pivots, substantially as described.

6. In an apparatus for loading and turning logs on sawmill-carriages, the combination
40 with a pivoted loading-arm and means for swinging the same about its pivot, of means for moving said pivot vertically, and a plurality of canting-arms with means for moving the same perpendicularly relative to said load-
45 ing-arm and for holding said canting-arms at the desired angle relative to said loading-arm while the latter is swung, about its pivot, substantially as described.

7. An apparatus for loading and turning
50 logs on sawmill-carriages, comprising a pivoted loading-arm adapted to press the logs toward the sawmill-carriage, and a pivoted canting-arm moving at right angles relative to said loading-arm and adapted to move hori-
55 zontally beneath the log on the carriage, with common means for raising and lowering the pivots of both of said arms and for swinging said arms about their pivots, substantially as described.

60 8. An apparatus for loading and turning logs on sawmill-carriages, comprising a pivoted loading-arm adapted to press the logs toward the sawmill-carriage, and a plurality of pivoted canting-arms moving at right angles
65 relative to said loading-arm and adapted to move horizontally beneath the log on the carriage, with common means for raising and

lowering the pivots of said arms and for swing-
ing said arms about their pivots, substantially as described.

9. An apparatus for loading and turning
70 logs on sawmill-carriages comprising a loading-arm with a vertically-movable pivot therefor, and a canting-arm provided with a vertically and a laterally movable pivot and nor-
75 mally movable at approximately right angles to the face of said loading-arm, with means for moving the pivot of said loading-arm vertically and for swinging the said arm about
80 its pivot, and means for raising and lowering the pivot of said canting-arm, for giving said pivot a distinct substantial lateral movement, and for swinging the said canting-arm about
said pivot, substantially as described.

10. An apparatus for loading and turning
85 logs on sawmill-carriages comprising a loading-arm with a vertically-movable pivot therefor, and a plurality of canting-arms each provided with a vertically and a laterally movable pivot and normally movable at approxi-
90 mately right angles to the face of said loading-arm, with means for moving the pivot of said loading-arm vertically and for swinging the said arm about its pivot, and means for raising
95 and lowering the pivots of said canting-arms, for giving said arms a distinct and substantial lateral movement and for swinging the said canting-arms about said pivots, substantially as described.

11. In an apparatus for loading and turning
100 logs on sawmill-carriages, the combination with a pivoted loading-arm and means for swinging the same about its pivot, of means for moving said pivot vertically, and a canting-arm normally moving at right angles to
105 the face of said loading-arm, with means for moving the same perpendicularly relative to said loading-arm and for holding said canting-arm at the desired angle relative to said loading-arm while the latter is swung about
110 its pivot, substantially as described.

12. In an apparatus for loading and turning
logs on sawmill-carriages, the combination with a pivoted loading-arm and means for swinging the same about its pivot, of means
115 for moving said pivot vertically, and a plurality of canting-arms normally moving at right angles to the face of said loading-arm, with means for moving the same perpendicu-
120 larly relative to said loading-arm and for holding said canting-arms at the desired angle relative to said loading-arm while the latter is swung about its pivot, substantially as described.

13. In an apparatus for turning logs on saw-
125 mill-carriages, the combination with a canting-arm pivotally connected to the actuating means, of means for horizontally moving said arm beneath the log on the carriage, for moving vertically the pivot of said arm and for
130 swinging said arm about said pivot, substantially as described.

14. In an apparatus for turning logs on sawmill-carriages, the combination with a pivoted

canting-arm bent at or near its pivot and provided with a rounded face and a biting edge at the free end thereof, the said rounded face projecting somewhat beyond the said biting edge on the end face of the canting-arm with means for swinging said free end beneath the log, and means for moving said pivot vertically and for swinging said arm about said pivot, substantially as described.

15. In an apparatus for turning logs on saw-mill-carriages, the combination with a canting-arm bent as shown and provided with a vertically-movable pivot, of means for moving said pivot vertically and for imparting thereto a distinct and substantial lateral movement, and means for swinging said arm about said pivot, substantially as described.

16. An apparatus for turning logs on saw-mill-carriages comprising a canting-arm provided mediate of its length with a vertically and a laterally movable pivot, with means for raising and lowering the pivot of said canting-arm, for swinging said pivot laterally, with a distinct and substantial movement and for moving the said canting-arm about said pivot, substantially as described.

17. An apparatus for turning logs on saw-mill-carriages comprising a plurality of canting-arms provided mediate of their length with vertically and laterally movable pivots, with means for raising and lowering the pivots of said canting-arms, for moving said pivots laterally with a distinct and substantial movement, and for swinging the said canting-arms about said pivots, substantially as described.

18. An apparatus for turning logs on saw-mill-carriages comprising a plurality of bent canting-arms provided mediate of their length with vertically and laterally movable pivots, the free end of said arms being provided with biting edges, with means for raising and lowering the pivots of said canting-arms, for moving said pivots laterally with a distinct and substantial movement and for swinging the said canting-arms about said pivots substantially as described.

19. In an apparatus for turning logs on saw-mill-carriages, the combination with a canting-arm, of an angular lever provided with two legs, and a vertically-movable pivot, the upper leg being pivotally connected to said canting-arm, of means operating on the opposite leg of said angular lever for raising the pivot thereof, vertically, and for swinging said angular lever about said pivot, and means for swinging said canting-arm about its pivot, substantially as described.

20. In an apparatus for turning logs on saw-mill-carriages, the combination with a canting-arm, of a vertically movable support for said canting-arm forming the pivot thereof, means pivotally connected thereto for moving said support vertically and for moving the same laterally with a distinct and substantial movement, and means for swinging

the said canting-arm about said pivot, substantially as described.

21. In an apparatus for turning logs on saw-mill-carriages, the combination with a plurality of canting-arms, of vertically-movable supports for said canting-arms, which supports form the pivots for said canting-arms, of means pivotally connected thereto for moving said supports vertically and for moving the same laterally with a distinct and substantial movement, and means for swinging said canting-arms about said pivots, substantially as described.

22. In an apparatus for turning logs on saw-mill-carriages, the combination with a plurality of canting-arms, of a plurality of angular levers each provided with two legs and a vertically-movable pivot, the upper legs being pivotally connected to said canting-arms, of means for exerting an upward pressure on the lower legs, of said angular levers adapted to raise the pivot thereof vertically, and to swing said angular levers about said pivots and means for swinging said canting-arms about their pivots, substantially as described.

23. In an apparatus for turning logs on saw-mill-carriages, the combination, of a canting-arm, a vertically-movable support for said canting-arm and forming the pivot thereof, means for moving said support vertically, means for moving the said support laterally with a distinct and substantial movement and means for preventing the canting-arm swinging beyond the saw-line until it is above the level of the carriage-timbers, substantially as described.

24. In an apparatus for turning logs on saw-mill-carriages, the combination with a frame supporting the sawmill-carriage, and a plurality of plates fast to said frame, of a plurality of canting-arms, vertically-movable supports for said canting-arms and forming the pivots thereof, means for holding the face of said canting-arms against the said plates during a portion of the upward travel of said supports, and for swinging the said supports laterally when the free ends of said canting-arms pass above said plates, substantially as described.

25. In an apparatus for turning logs on saw-mill-carriages, the combination with a frame supporting the sawmill-carriage, and a plate fast to said frame, of a canting-arm, an angular lever provided with two legs, and a vertically-movable pivot, the upper leg being pivotally connected to said canting-arm and forming the pivot thereof, of means for exerting an upward pressure on the lower leg of said angular lever, causing said canting-arm to bear against said plate during a portion of the upward travel of said angular lever, and to swing laterally above said plate when the free end of said canting-arm passes said plate, with means for swinging said canting-arm about its pivot, substantially as described.

26. In an apparatus for turning logs on sawmill-carriages, the combination with a frame supporting the sawmill-carriage, and a plate fast to said frame, of a canting-arm having a rounded face and a biting edge beneath the same, an angular lever provided with two legs, and a vertically-movable pivot, the upper leg being pivotally connected to said canting-arm and forming the pivot thereof, of means for exerting an upward pressure on the lower leg of said angular lever, causing the rounded face of said canting-arm to bear against said plate during a portion of the upward travel of said angular lever, and to swing laterally above said plate when the free end of said canting-arm passes said plate, with means for swinging said canting-arm about its pivot, substantially as described.

27. In an apparatus for turning logs on sawmill-carriages, the combination with a frame supporting the sawmill-carriage, and a plate fast to said frame, of a canting-arm, an angular lever provided with a long upper and a short lower leg and a vertically-movable pivot, the upper leg being pivotally connected to said canting-arm and forming the pivot thereof, of means for exerting an upward pressure on the short lower leg of said angular lever, causing said canting-arm to bear against said plate during a portion of the upward travel of said angular lever, and to swing rapidly laterally above said plate when the free end of said canting-arm passes said plate, and means for swinging said canting-arm about its pivot, substantially as described.

28. In an apparatus for turning logs on sawmill-carriages, the combination with a canting-arm, of an angular lever provided with one long and one short leg, and a vertically-movable pivot, the long leg being pivotally connected to said canting-arm, of means operating on the short leg of said angular lever for raising the pivot thereof vertically, and for swinging said angular lever about said pivot, and means for checking the motion of said angular lever about its pivot until said canting-arm has reached a predetermined height, substantially as described.

29. In an apparatus for turning logs on sawmill-carriages, the combination with a plurality of canting-arms, of a plurality of angular levers each provided with a long and a short leg, and a vertically-movable pivot, the long legs being pivotally connected to said canting-arms, of means for exerting an upward pressure on the short legs of said angular levers adapted to raise the pivots thereof vertically, and to swing said angular levers about said pivots, means for checking the motion of said angular levers about their pivots until said canting-arms have reached a predetermined height, and means for swinging said canting-arms about their pivots, substantially as described.

30. In an apparatus for turning logs on sawmill-carriages, the combination with a frame supporting the sawmill-carriage, and a plate

fast to said frame, of a canting-arm, a vertical support therefor forming the pivot of said canting-arm, means for holding the face of said canting-arm against said plate during a portion of the upward travel of said support, and for swinging said support laterally when the fore end of said canting-arm passes above said plate, and means for swinging said canting-arm about its pivot, substantially as described.

31. In an apparatus of the character described, a log-engaging arm having two independently-movable supports, to each of which it is so connected as to move upon either as the other is independently moved, means for independently or simultaneously moving either support vertically and for giving the said supports substantial lateral movement, substantially as described.

32. In an apparatus of the character described, the combination of a log-engaging arm having two independently-movable supports, to each of which it is so connected as to move upon either as the other support is independently moved, means for independently or simultaneously moving either support vertically and for giving the said supports a distinct lateral movement, with a pivoted loading arm, and means for rotating said loading-arm about its pivot, substantially as described.

33. In an apparatus of the character described, the combination of a canting-arm having two independently-movable supports, to each of which it is so connected as to move upon either support as the other is independently moved, means for independently or simultaneously moving either support vertically and for giving said supports a distinct and substantial lateral movement, with a loading-arm provided with a vertical movable pivot, and means for swinging said loading-arm about said pivot, substantially as described.

34. In an apparatus of the character described, the combination with a canting-arm having two independently-movable supports, to each of which it is so connected as to move upon either support as the other is independently moved, means for independently or simultaneously moving either support vertically, and for giving said supports a distinct and substantial lateral movement, of a loading-arm provided with a vertically-movable pivot, with means for moving the same simultaneously with one of the movable supports for the canting-arm, and means for swinging said loading-arm about its pivot, substantially as described.

35. In an apparatus for loading logs on sawmill-carriages, the combination with a loading-arm, of an approximately vertical bar or bars forming a support pivotally connected to said loading-arm and forming the pivot thereof, a radius-bar pivotally connected to said supporting bar or bars at some distance from the piston-rod and holding the said bar

or bars in an approximately vertical position, a stationary cylinder with piston-rod and connections for raising and lowering said support, and means for swinging said loading-arm about its pivot from its normal position in the log-deck to a position in the plane of the saw, substantially as described.

36. In an apparatus for loading logs on sawmill-carriages, the combination with a loading-arm, of an approximately vertical bar or bars forming a support pivotally connected to said loading-arm and forming the pivot thereof, a radius-bar pivotally connected to said supporting bar or bars at some distance from the piston-rod and holding said bar or bars in an approximately vertical position, a stationary cylinder with piston-rod and connections for raising and lowering said support, and a second cylinder with piston-rod and connections for swinging said loading-arm about its pivot from its normal position in the log-deck to a position in the plane of the saw, substantially as described.

37. An apparatus for loading and turning logs on sawmill-carriages comprising a loading-arm with a vertically-movable pivot therefor, and a canting-arm provided with a vertically and a laterally movable pivot and normally movable at approximately right angles to the face of said loading-arm, with means for moving the pivot of said loading-arm vertically and for swinging the said arm about its pivot in one direction, and means for simultaneously raising or lowering the pivots of said canting-arm and said loading-arm, means for swinging said canting-arm pivot laterally, and means for swinging the said canting-arm about said pivot in the opposite direction to the motion of said loading-arm, substantially as described.

38. In an apparatus for loading and turning logs on sawmill-carriages, the combination with a pivoted canting-arm bent at or near its pivot and provided with a rounded face and a biting edge at the free end thereof with means for swinging said free end beneath the log, means for moving said pivot vertically and for swinging said arm about said pivot, and a loading-arm with means for moving the same in a constant angular relation to said canting-arm, substantially as described.

39. In an apparatus for loading and turning logs on sawmill-carriages, the combination with a frame supporting the sawmill-carriage, and a plate fast to said frame, of a canting-arm, an angular lever provided with two legs, and a vertically-movable pivot, the upper leg being pivotally connected to said canting-arm and forming the pivot thereof, of means for exerting an upward pressure on the lower leg of said angular lever, causing said canting-arm to bear against said plate during a portion of the upward travel of said angular lever, and to swing laterally above said plate when the free end of said canting-arm passes said plate, with means for swinging said cant-

ing-arm about its pivot, a loading-arm provided with a vertically-movable pivot, and means for swinging said loading-arm about its pivot, substantially as described.

40. In an apparatus for loading and turning logs on sawmill-carriages, the combination with a frame supporting the sawmill-carriage, and a plate fast to said frame, of a canting-arm having a rounded face and a biting edge beneath the same, an angular lever provided with two legs, and a vertically-movable pivot, the upper leg being pivotally connected to said canting-arm and forming the pivot thereof, of means for exerting an upward pressure on the lower leg of said angular lever, causing the rounded face of said canting-arm to bear against said plate during a portion of the upward travel of said angular lever, and to swing laterally above said plate when the free end of said canting-arm passes said plate, with means for swinging said canting-arm about its pivot, a loading-arm provided with a vertically-movable pivot, and means for swinging said arm about its pivot, substantially as described.

41. In an apparatus for loading and turning logs on sawmill-carriages, the combination with a frame supporting the sawmill-carriage, and a plate fast to said frame, of a canting-arm, an angular lever provided with a long upper and a short lower leg and a vertically-movable pivot, the upper leg being pivotally connected to said canting-arm and forming the pivot thereof, of means for exerting an upward pressure on the short lower leg of said angular lever, causing said canting-arm to bear against said plate during a portion of the upward travel of said angular lever, and to swing rapidly laterally above said plate when the free end of said canting-arm passes said plate, and means for swinging said canting-arm about its pivot, a loading-arm provided with a vertically-movable pivot, and means for swinging said arm about said pivot, substantially as described.

42. In an apparatus for loading and turning logs on sawmill-carriages, the combination with a canting-arm, of an angular lever provided with one long and one short leg, and a vertically-movable pivot, the long leg being pivotally connected to said canting-arm, of means operating on the short leg of said angular lever for raising the pivot thereof vertically, and for swinging said angular lever about said pivot, and means for checking the motion of said angular lever about its pivot until said canting-arm has reached a predetermined height, a loading-arm provided with a vertically-movable pivot, and means for swinging said arm about its pivot, substantially as described.

43. In an apparatus for loading logs on sawmill-carriages, the combination with a loading-arm and a separate canting-arm, of a support pivotally connected to said loading-arm and forming the pivot thereof, and an independent support pivotally connected to said

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canting-arm and forming the pivot thereof, a stationary cylinder with piston-rod and connections for raising and lowering both of said supports, and means for swinging both of said arms about their pivots, substantially as described.

44. In an apparatus for loading logs on sawmill-carriages, the combination with a loading-arm, and a separate canting-arm, of a support pivotally connected to said loading-arm and forming the pivot thereof, and an independent support pivotally connected to said canting-arm and forming the pivot thereof, a stationary cylinder with piston-rod and connections for raising and lowering both of said supports, and a second cylinder with piston-rod and connections for swinging both of said arms about their pivots, substantially as described.

45. In an apparatus for loading and turning logs on sawmill-carriages, the combination with a V-shaped plate, of a support pivotally connected to said plate at or near the apex thereof, a bent canting-arm, and a support vertically connected thereto and forming the pivot thereof, a cylinder with piston-rod and connections adapted to raise and lower both of said supports, and a second cylinder with piston-rod and connections adapted to swing both said plate and said canting-arm about their pivots, substantially as described.

46. In an apparatus for loading logs on sawmill-carriages, the combination with a loading-arm, of an approximately vertical bar or bars forming a support pivotally connected to said loading-arm and forming the pivot thereof, a radius-bar pivotally connected to said supporting bar or bars and holding the same in an approximately vertical position, a canting-arm with a vertically-movable support forming a pivot therefor, a stationary cylinder with piston-rod and connections for raising and lowering both of said supports, and means for swinging both of said arms about their pivots, substantially as described.

47. In an apparatus for loading logs on sawmill-carriages, the combination with a loading-arm, of an approximately vertical bar or bars forming a support pivotally connected to said loading-arm and forming the pivot thereof, a radius-bar pivotally connected to said supporting bar or bars and holding the

same in an approximately vertical position, a canting-arm with a vertically-movable support forming a pivot therefor, a stationary cylinder with piston-rod and connections for raising and lowering both of said supports, and a second cylinder with piston-rod and connections for swinging both of said arms about their pivots, substantially as described.

48. In a log loading and turning apparatus, the combination with a pivoted loading-arm and a pivoted canting-arm, of two stationary cylinders, with means operated by one of the said cylinders for raising or lowering the pivots of both of said arms, and means operated by the other cylinder for swinging both of said arms about their pivots, substantially as described.

49. In a log loading and turning apparatus, the combination with a pivoted loading-arm and a pivoted canting-arm, of a reciprocating part and means operated thereby for raising or lowering the pivots of both arms, and a second reciprocating part and means operated thereby for swinging both of said arms about their pivots, substantially as described.

50. In a log loading and turning apparatus, the combination with a pivoted loading-arm and a plurality of pivoted canting-arms, of a reciprocating part and means operated thereby for raising or lowering the pivots of all of said arms, and a second reciprocating part and means operated thereby for swinging all of said arms about their pivots, substantially as described.

51. In an apparatus for loading and turning logs on sawmill-carriages, the combination of the loading-arm F, the canting-arms M, the vertical bars H, the side bars E, the bent bars P, the radius-bar H', the rope with weight K³, the guide-rod U, the steam-cylinders C and D, with their valves Q and Q', the operating hand-rod T, with its pivot, crank-arms and connecting-rods in pivots, all connected and operating together, as and for the purposes described.

In testimony whereof I affix my signature in presence of two witnesses.

PETER MCNERNEY.

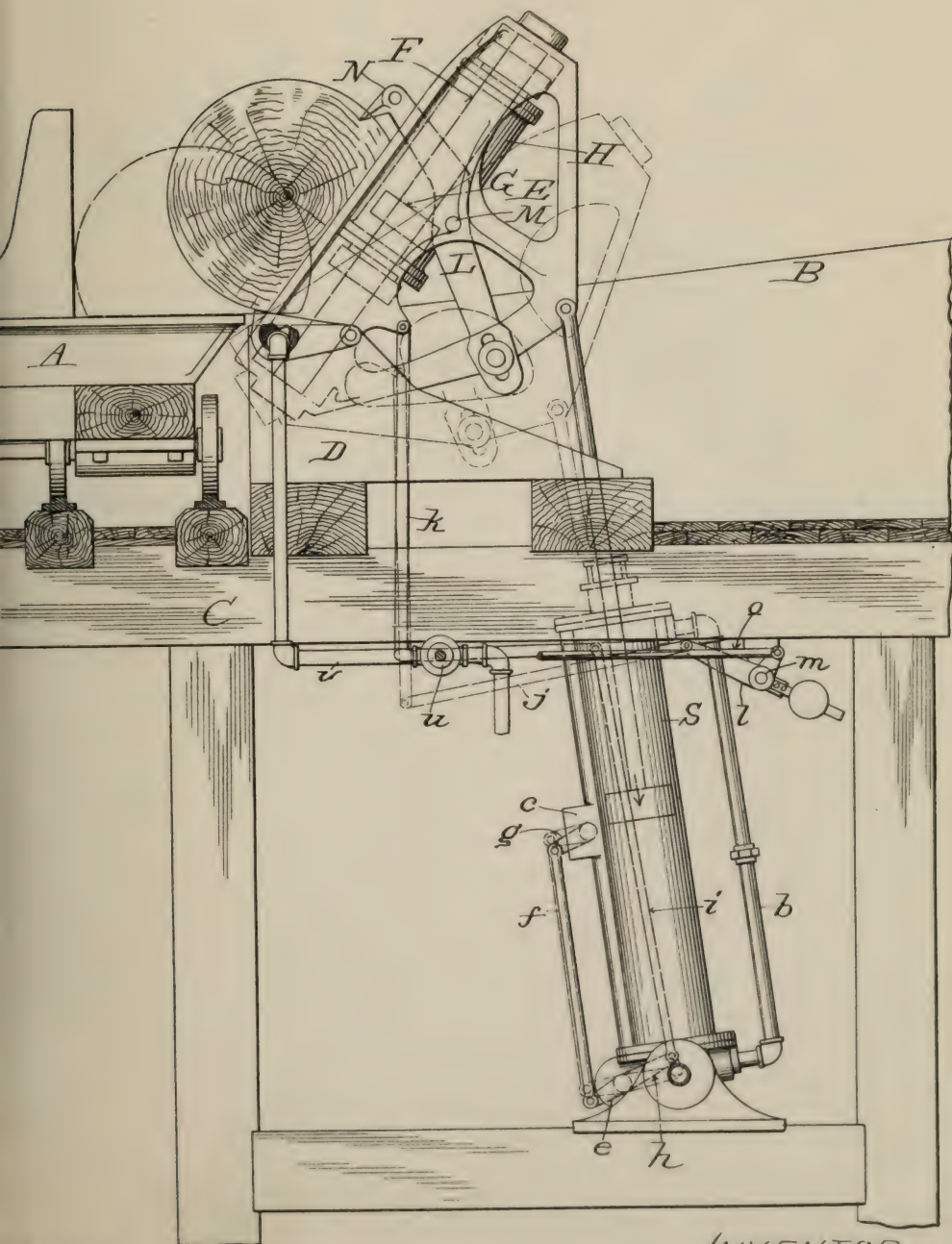
Witnesses:

AMOS HOLGATE,
TATTIE E. TAYLOR.

(Application filed May 24, 1897.)

5 Sheets—Sheet 1.

Fig. 1.



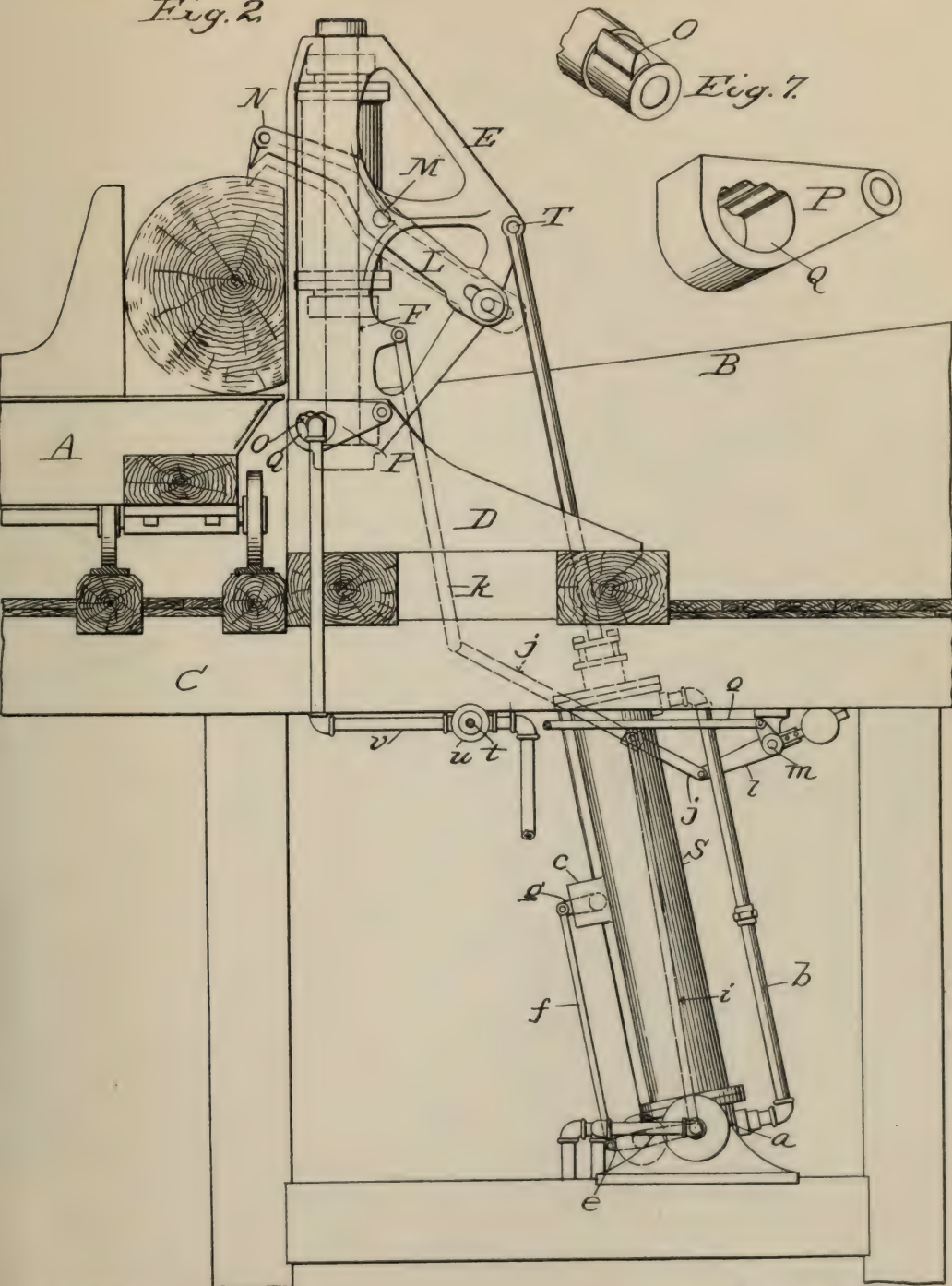
E. E. FITZGERALD. LOG CANTER.

(Application filed May 24, 1897.)

(No Model.)

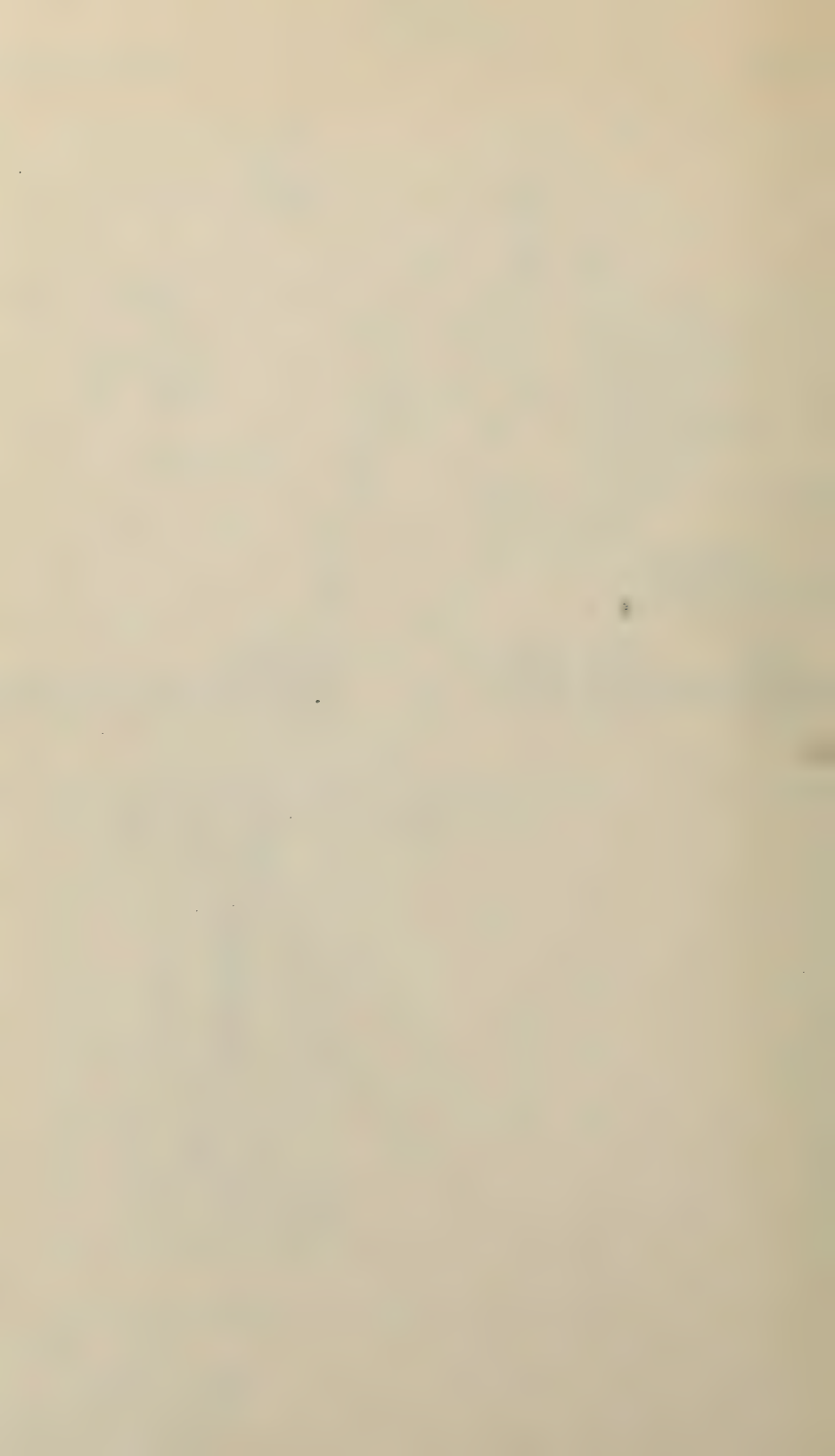
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Fig. 2



ATTEST;
 W. C. Burdine.
 D. E. Burdine.

INVENTOR:
 Edward E. Fitzgerald.
 BY Dodge and Sang, ATTORNEYS.



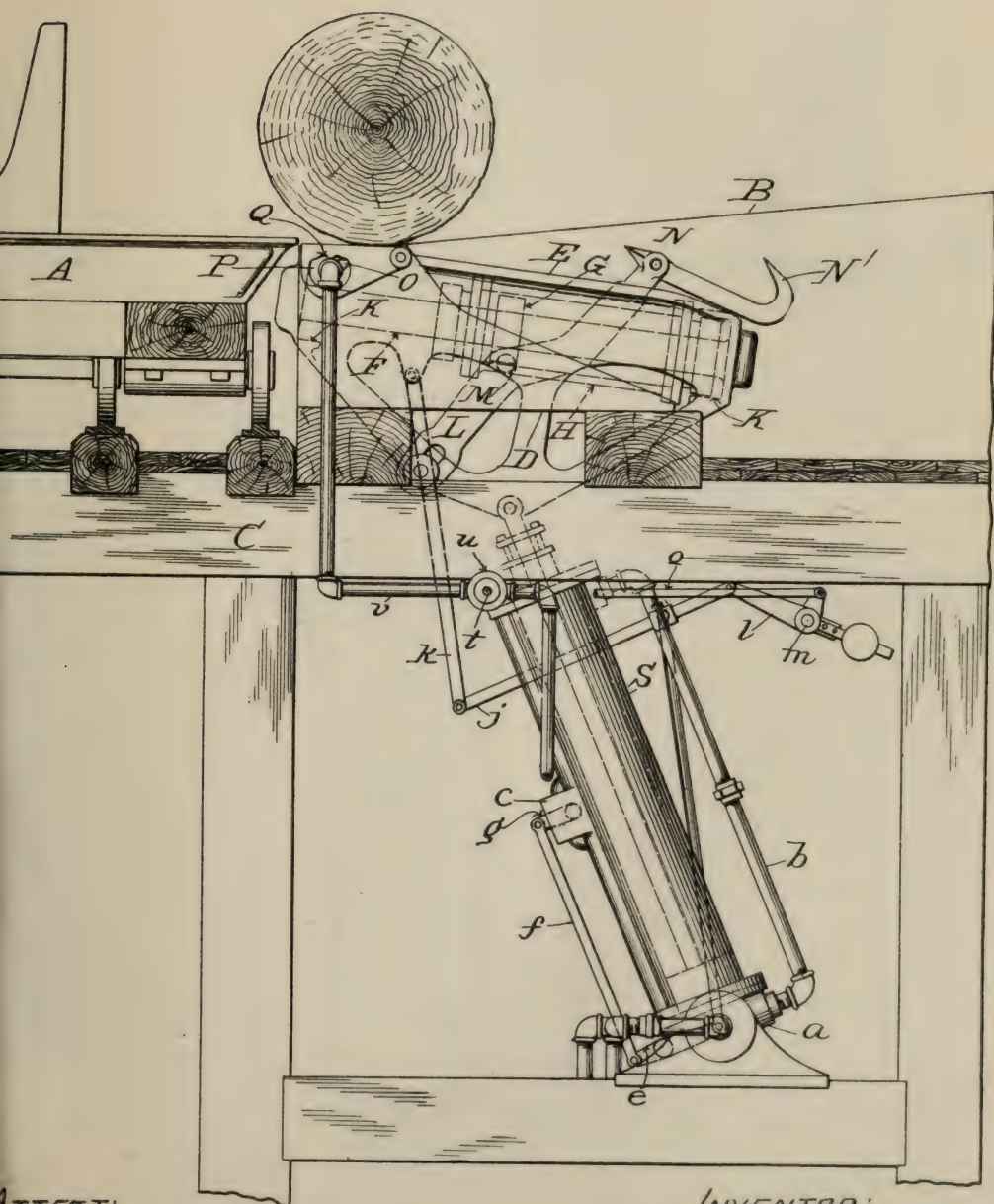
E. E. FITZGERALD.
LOG CANTER.

(Application filed May 24, 1897.)

(No Model.)

5 Sheets—Sheet 3.

Fig. 3.



ATTEST;

E. C. Burdine.

D. E. Burdine.

INVENTOR;

Edward E. Fitzgerald

By Dodge & Sons

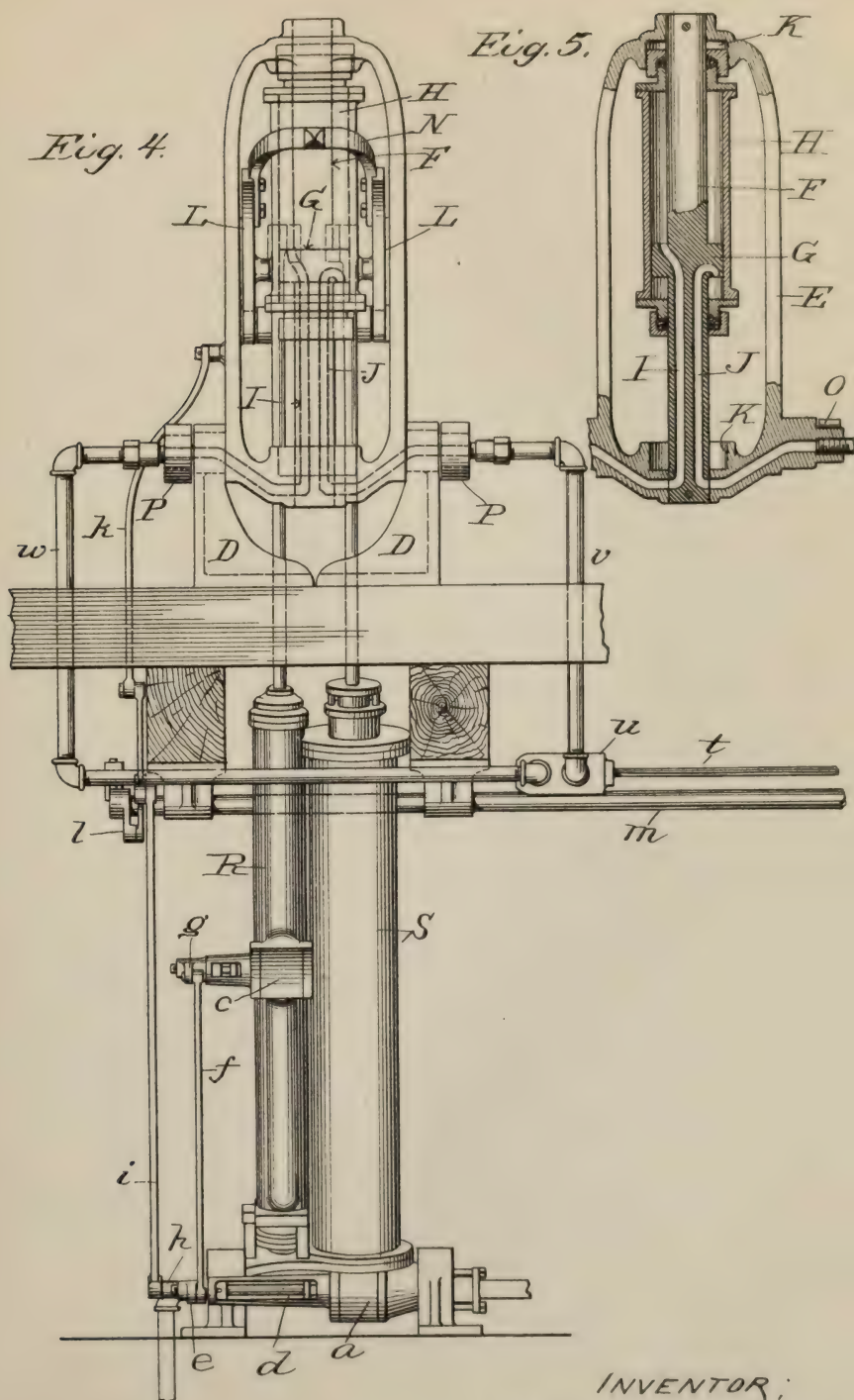
ATTY'S

E. E. FITZGERALD. LOG CANTER.

(Application filed May 24, 1897.)

(No Model.)

5 Sheets—Sheet 4.



INVENTOR;

Edward E. Fitzgerald
BY Dodge and Davis
ATTY'S

TEST;
E. E. Fitzgerald
E. E. Fitzgerald

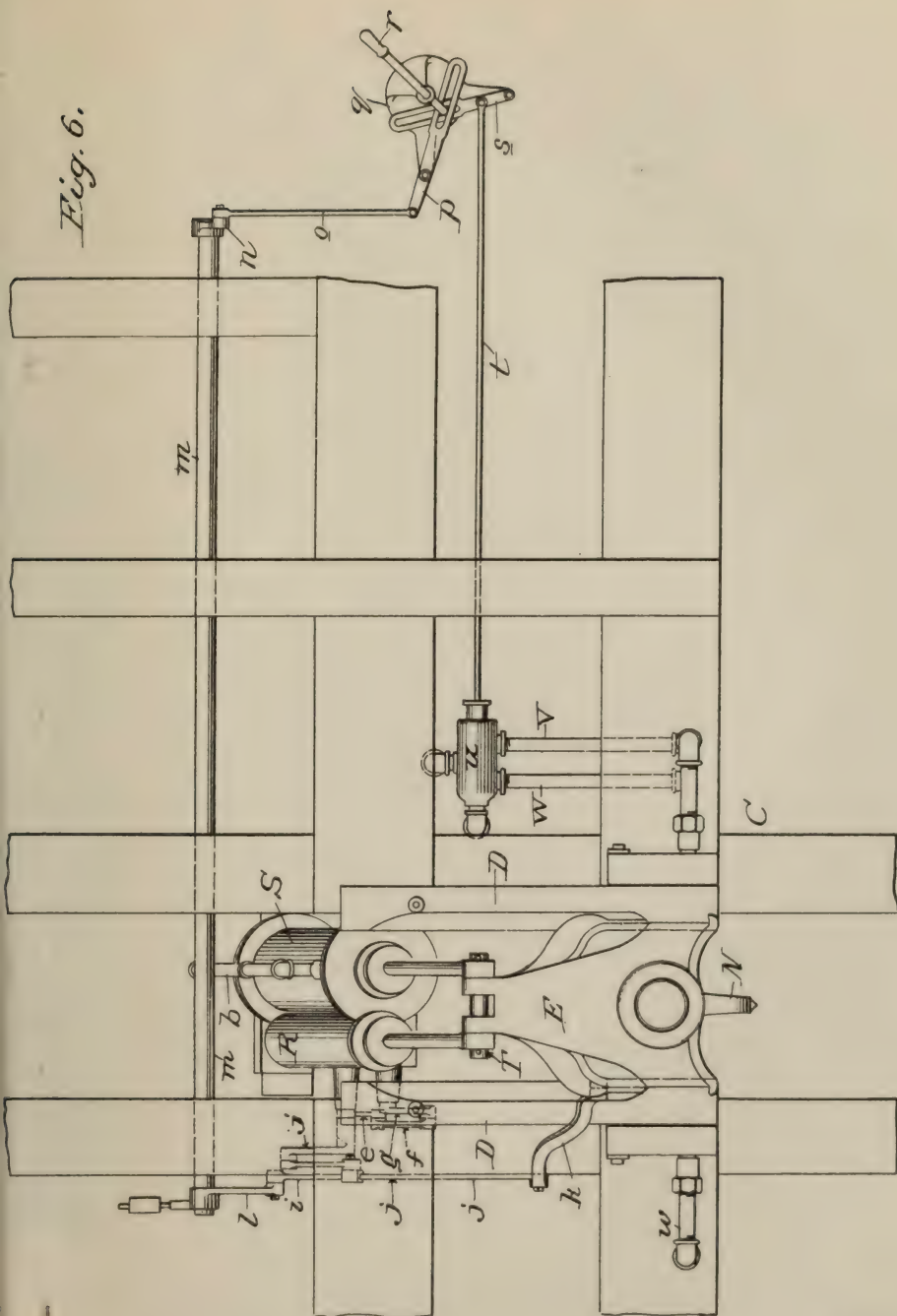
E. E. FITZGERALD.
LOG CANTER.

(Application filed May 24, 1897.)

(No Model.)

5 Sheets—Sheet 5.

Fig. 6.



test
Burdine.
Burdine.

Inventor,
Edward E. Fitzgerald,
by Dodge and Sons,
Attys.

UNITED STATES PATENT OFFICE.

EDWARD EUGENE FITZGERALD, OF MILWAUKEE, WISCONSIN, ASSIGNOR
OF ONE-HALF TO THE EDWARD P. ALLIS COMPANY, OF SAME PLACE.

LOG-CANTER.

SPECIFICATION forming part of Letters Patent No. 623,002, dated April 11, 1899.

Application filed May 24, 1897. Serial No. 637,927. (No model.)

To all whom it may concern:

Be it known that I, EDWARD EUGENE FITZGERALD, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Log-Canters, of which the following is a specification.

My present invention relates to log-canters, the operation and advantages of which will be hereinafter set forth, reference being had to the annexed drawings, wherein—

Figures 1, 2, and 3 are side elevations of the canter, shown in its proper relation to the log deck and carriage, the parts being in different working positions in the various views; Fig. 4, a front elevation; Fig. 5, an enlarged sectional view showing certain details of construction; Fig. 6, a top plan view, and Fig. 7 an enlarged perspective view illustrative of certain details.

One object of my invention, among others, is to produce a canter by which the log is turned away from the knees in the act of turning.

A further advantage resides in the fact that by the construction employed the log as it balances over or turns over falls upon the canter-frame, which, being steam-actuated, forms, as it were, a steam-cushion for the log. By this arrangement the log does not fall upon the carriage or upon the log-deck, as is usual.

Another advantage is present in the fact that the same movement which operates the hook also turns the log, thereby saving time over those constructions wherein the log is first removed from the carriage and then turned.

Other advantages are also present and will appear in the following description.

Referring to Figs. 1, 2, and 3, A denotes the carriage, and B the log deck or way, supported upon suitable framing C. At and below the end of the log-deck adjacent to the carriage is secured a frame D, in which is journaled a frame E in a manner to be presently explained.

Frame E has mounted within it a piston-rod F, formed with a piston G, and a cylinder H is mounted upon and works upon said

rod, steam-inlets I and J extending through the rod and communicating, respectively, with the upper and lower spaces above the piston. The trunnions of frame E, working in frame D, are hollow, and the passages thus formed connect the passages I and J with suitable steam-pipes, which are connected to the trunnions by packed swiveled couplings.

Upon reference to Fig. 5 it will be noted that the upper and lower ends of frame E are provided with annular recesses K, which, in conjunction with the packing-nuts on the heads of the cylinder, form air-cushions for the cylinder at the end of its stroke as it moves up or down.

The frame E extends rearwardly, and at a point below its center there is pivoted to it at each side an arm L, which arms extend upward in a forward direction and are journaled upon the cylinder at M. To the ends of said arms is bolted or otherwise securely fastened a hook N, which extends out over the log on the carriage when the parts are in the position indicated in Fig. 2. The rear ends of arms L are slotted, as shown, so that the point of the hook as the cylinder descends may be drawn in toward the front face of frame E.

When operating upon logs of large diameter, it may sometimes be necessary to employ a hook of longer reach or throw, and to this end there is pivoted to the end hook N a supplemental hook N', as shown in Fig. 1 of the drawings. When not in use, this hook may be removed or thrown back out of the way.

The trunnions of frame E, as will be seen upon reference to Figs. 5 and 7, are formed with lugs or projections O. To each side of frame D are pivoted blocks P of the form shown in Figs. 1, 2, 3, and 7. These blocks are formed with a flat upper face and with a transverse opening Q, the upper side of which is cam-shaped, as shown. The lugs O of the trunnions work against these cam-surfaces as the frame E is turned upon its bearings and the blocks are raised and lowered, forming a support for the lower face or side of the log when it is being withdrawn from the carriage by the hook to be turned. The blocks are so pivoted to the supporting-frame D that they normally are below the log-deck and do not interfere with the pas-

sage of the logs from the deck to the carriage. (See Fig. 3.)

Beneath the log-deck and in line with the frame E are pivoted two cylinders, an oil-cylinder R and a steam-cylinder S, the cylinders being connected and pivoted in the same frame or base, as shown in Fig. 4. The piston-rods of these cylinders are connected to the frame E at its rear by a pin T, so that both piston-rods must move in unison.

At the base of the steam-cylinder there is provided a valve *a* to control the inlet of steam to said piston, the steam passing directly from the valve into the lower part beneath the piston and through a pipe *b* from the valve to the upper part of the piston, according as the valve is open to one or the other of said inlets. The oil-cylinder is provided midway of its length with a valve *c* to permit the oil to pass from one end of the cylinder to the other, and thus allow the piston to move or to stop the flow of the oil, and thus stop the piston in its travel.

The stem *d* of the steam-valve *a* is connected through a rocker-arm *e*, link *f*, and rocker-arm *g* to the oil-valve *c*, the valves being arranged to open and close in unison.

To the outer end of valve-stem *d* there is secured another rocker-arm *h*, which is connected by link *i* to rod *j*, said rod *j* being in turn connected at its forward end to a rod *k*, pivotally connected to frame E. Rod *j* at its rear end is connected to an arm *l*, secured upon a counterweighted cross-shaft *m*, secured beneath the framing C. Cross-shaft *m* at its opposite end is connected through arm *n* and link *o* to a slotted arm *p*, pivoted upon a stand *q*. A hand-lever *r* is mounted in said stand and in such manner that it has a universal movement, the lower end of the lever passing through the slot in arm *p* and into a slot formed in an arm *s*, also pivoted upon the stand *q*. Extending from said arm *s* is a rod *t*, which controls the valve *u*, admitting steam to the upper cylinder II through pipes *v* and *w*.

It will be noted upon reference to Fig. 6 that the arms *p* and *s* stand at approximately right angles to each other, so that by a right line movement of the lever either one of the arms may be moved without affecting the other, while if the lever be turned in a circular path both arms may be moved simultaneously and the machine caused to go through one complete operation. In other words, by moving the lever in a plane through the slot of one arm it will serve to operate the other arm *p* or *s*, as the case may be, or by moving the lever coincident with the surface of a cone, thus crossing the planes through both slots of the arms *p* and *s*, both arms will be moved simultaneously.

Assuming the parts to be in the position indicated in Fig. 3, in which relation steam is shut off both from the lower and upper pistons, the valve *c* of the oil-cylinder is closed so that no oil can pass therethrough. A log

is then rolled down the logway onto the carriage and a cut or any desired number of cuts are made. After this the operator by movement of the hand-lever *r* moves arm *p* and through the connections above set forth admits steam to cylinder S below the piston. The valve in the oil-cylinder is also opened to the same degree as the steam-valve, and frame E is forced upward into the position indicated in Fig. 2. If the lever *r* be moved in a right line only, the lower cylinder alone will be affected and the frame will be raised quickly or slowly, according to the extent to which the valves are opened. When the frame reaches its vertical position, the steam will be automatically cut off through the connections *i*, *j*, *k*, and *l* with shaft *m*, but not until the parts have passed from the position indicated in Fig. 3 to that indicated in Fig. 2. While the frame is moving into the vertical, the operator by a further movement of the lever in a line, so as to act upon arm *s*, admits steam into cylinder II, causing the hook to descend and enter the log, when by a further movement of lever *r* in a circular path steam will be admitted in the upper end of cylinder S and the frame drawn down. In turning, lugs O, acting upon block P, will throw said blocks upwardly into the position denoted in Fig. 1, thereby forming a support for the lower side of the log. As the log is turned away from the carriage and knees it rests bodily against the frame and upon the block and the descent of the frame and cylinder is regulated or checked by the oil in the oil-cylinder. When the frame reaches the position indicated in dotted lines in Fig. 1, the blocks P are withdrawn from beneath the log and the hook, acting on the upper part of the log, forces it over onto the carriage, the packing-nut on the lower end of the cylinder II entering the annular chamber K and checking the cylinder in its downward movement. So soon as the log is in its place upon the carriage steam is admitted above piston G, thus elevating cylinder II and hook N into position to again operate upon the log.

Through the connections of the valves and the controlling-lever, as above set forth, the movements of the machine are in a sense independent of the movement of the lever after the machine has once been started—that is to say, the frame will move entirely up or down unless arrested and then automatically come to a stop, the valve being what is known as a "floating" valve.

If it be desired to move the frame quickly, all that is necessary is to give the lever a full throw, opening the steam-valves to their full extent and also opening the oil-check valve to a like degree, thereby permitting the steam to act with its full force and effect. Ordinarily, however, steam is admitted gradually, and the piston in the lower cylinder can move only as fast as the oil in the oil-cylinder can pass from one side to the other, and when the machine comes to a stop the steam is pre-

vented from working expansively by the oil-check.

As before stated, one complete revolution of the controlling-lever will cause the frame to ascend to the vertical, the hook to engage the log, the frame to swing back, carrying the log with it, the log to be turned and placed flat face down upon the carriage, and finally the hook to ascend ready to again engage the log.

By shifting the pivotal connection of link *i* along the link *j* the point at which the valves will close can be regulated as desired.

When the log is first rolled upon the carriage and the frame is in a horizontal position, the log may, if necessary, be crowded up against the knee by simply admitting steam above piston G, causing the hook to press the log forward, thereby answering the purposes of a log-loader.

Having thus described my invention, what I claim is—

1. In a log-canter, the combination of a working cylinder and its piston and piston-rod; an oil-check cylinder and its piston and piston-rod; a canter-frame; and a common connection between said frame, and the piston-rods.

2. In a log-canter, the combination of a working cylinder, and its piston and piston-rod; an oil-check cylinder, and its piston and piston-rod; a canter-frame; a common point of connection between said frame and the piston-rods; valves for said pistons; and means for moving said valves in unison.

3. In a log-canter, the combination of a working cylinder, and its piston and piston-rod; an oil-check cylinder, and its piston and piston-rod; a canter-frame; a common point of connection between said frame and the piston-rods; valves for said pistons; connections between said valves to move them in unison; and connections between said valve connections and the canter-frame.

4. In a log-canter, the combination of a pivoted canter-frame; a hook carried thereby; means for operating said hook also carried by the frame; a power-cylinder for actuating the canter-frame; and means for admitting steam to said cylinder and to the hook-actuating mechanism, said means being so arranged that parts may be actuated simultaneously or independently.

5. In a log-canter, the combination of a pivoted canter-frame; a piston carried thereby; a hook adapted to be actuated by said piston; a power-cylinder for actuating the canter-frame; and means for controlling the actuation of the pistons independently or simultaneously.

6. In a log-canter, the combination of a pivoted canter-frame; a cylinder carried thereby; a hook adapted to be actuated thereby; a power-cylinder for actuating the canter-frame; and means for actuating the cylinders.

7. In a log-canter, the combination of a pivoted canter-frame; means for raising and low-

ering it; a hook pivoted to the frame; and a power-cylinder carried by the frame for actuating the hook.

8. In a log-canter, the combination of a pivoted canter-frame; means for raising and lowering it; a hook pivoted to the frame; a power-cylinder carried by the frame for actuating the hook; and air-chambers formed in the frame for receiving the cylinder at the ends of its stroke.

9. In a log-canter, the combination of a pivoted canter-frame; a hook provided with a slotted rear end; a pivot-pin extending from the frame through said slot; and means carried by the frame and moving in a line approximately parallel to the face thereof for raising and lowering the hook, substantially as described.

10. In a log-canter, the combination of a pivoted canter-frame; a hook provided with a slot at or near its rear end; a pivot-pin extending from the frame through said slot; means carried by the frame and moving in a line approximately parallel to the face thereof for raising and lowering the hook; and a supplemental or extension hook pivoted to the outer end of the pivoted hook, substantially as and for the purpose described.

11. In a log-canter, the combination of a pivoted canter-frame; a piston-rod provided with a piston secured within said frame; a cylinder mounted upon and designed to be traversed back and forth upon the rod; and a hook pivoted to the frame and connected to the cylinder.

12. In a log-canter, the combination of a pivoted canter-frame; a piston-rod provided with a piston mounted therein; a cylinder mounted upon and designed to be traversed upon said rod; a hook pivoted to the frame and connected to the cylinder, and steam-inlets extending through the rod and discharging respectively above and below the piston.

13. In a log-canter, the combination of a pivoted canter-frame provided with extended trunnions; lugs upon said trunnions; and blocks pivoted upon the frame-support in rear of the trunnions, provided with cam-shaped recesses designed to fit over the trunnions and lugs and to act in conjunction therewith, to elevate the forward ends of the blocks and project them beyond the face of the frame as it swings back substantially as and for the purpose described.

14. In a log-canter, the combination of a pivoted canter-frame; blocks pivoted to the frame-support; and means for elevating the forward ends of the blocks and projecting them beyond the face of the canter-frame to afford a bearing for the lower side of the log as the frame swings back.

15. In a log-canter, the combination of a pivoted canter-frame carrying a hook; blocks pivoted to the frame-support; and means carried by the frame for elevating the forward ends of the blocks and projecting them be-

yond the face of the frame to afford a bearing for the lower side of the log as the frame swings back.

16. In a log-canter, the combination of a
5 pivoted canter-frame; blocks pivoted to the frame-support; and means controllable by the movement of the canter-frame for raising the forward ends of the blocks and projecting the same beyond the face of the frame as
10 the frame begins to swing back and to lower the blocks into alinement with the face of the frame when the frame reaches that position where the log is to be discharged therefrom.

17. In a log-canter, the combination of a
15 pivoted canter-frame provided with extended trunnions having arms or lugs O formed thereon; blocks P pivoted to the frame-support in rear of said trunnions and provided with cam-shaped recesses Q designed to fit over the
20 lugs O, said lugs and cam-shaped recesses being so adapted and arranged as to elevate the forward ends of the blocks and to project the same beyond the face of the canter-frame during the first portion of its rearward move-
25 ment; and means for raising and lowering the canter-frame.

18. In a log-canter, the combination of a pivoted canter-frame; forwardly-extending
30 arms L pivoted to the rear of said frame; a curved hook N connecting the outer ends of the arms; and a cylinder intermediate of and connected to said arms for raising and lowering the same.

19. In a log-canter, the combination of a
35 log-deck; a supporting-frame D secured below the same; a canter-frame pivoted within the support; log grasping and releasing mechanism carried by said canter-frame; a pivoted actuating-cylinder below the deck connected
40 to the frame; and means for controlling the action of said cylinder and the log grasping and releasing mechanism.

20. In a log-canter, the combination of a canter-frame carrying a hook and a cylinder
45 and piston for actuating the same; steam-inlets to said cylinder; a valve *u* for controlling the admission of steam to said cylinder; a valve-rod *l*; a pivoted arm *s* connected to said rod and provided with a slot in its end; and
50 a handle or lever working in said slot for moving the arm.

21. In a log-canter, the combination of a pivoted canter-frame carrying a steam-actu-

ated cylinder and hook; a working cylinder
for moving the frame; a stand as *q* having
55 pivoted thereto slotted arms *p* and *s*; a lever
r mounted in said stand its lower end work-
ing in the slots; and connections between said
arms and the hook-actuating cylinder, and
the working cylinder.

22. In a log-canter, the combination of a
pivoted canter-frame; a steam-cylinder for
moving the same; a valve for controlling the
admission of steam to said cylinder; a rocker-
65 arm *h* connected to the valve-stem; a counter-
weighted cross-shaft *m*; arm *l* and links *i* and
j connecting said shaft and rocker-arm *h*;
stand *q*; lever *r*; slotted arm *p*; and arm *n*
and link *o* connecting said arm *p* and the
70 shaft.

23. In a log-canter, the combination of a
pivoted canter-frame; a power-cylinder car-
ried thereby; and a hook connected to the
frame and the cylinder and adapted to be
operated by the latter, substantially as de-
75 scribed.

24. In a log-canter, the combination of a
canter-frame; a power-cylinder carried there-
by and adapted to move back and forth ap-
proximately parallel to the face thereof; a
80 hook connected to said cylinder and provided
with a slotted rear end; and a pivot-pin ex-
tending from the frame through said slot.

25. In a log-canter, the combination of a
pivoted canter-frame; a hook carried thereby;
85 means for operating the hook also carried by
the frame; means for swinging said frame
back and forth; and means operating in con-
junction with the hook and the frame, for sup-
porting a log thereon, holding it as the frame
90 begins its backward movement, and discharg-
ing the log as the frame nears its limit of back-
ward movement.

26. In a log-canter, the combination of a
canter-frame; a power-cylinder for moving
95 the same; a check-cylinder also connected to
the frame; valves for said cylinders; and
means for causing said valves to work in uni-
son, substantially as and for the purpose de-
scribed.

In witness whereof I hereunto set my hand
in the presence of two witnesses.

EDWARD EUGENE FITZGERALD.

Witnesses:

B. T. LEUZARDER,
GEO. H. BURNHAM.

J. R. CARTER.
CONNECTING DEVICE.

Application filed Aug. 7, 1901.

(No Model.)

2 Sheets—Sheet 1.

FIG. 1.

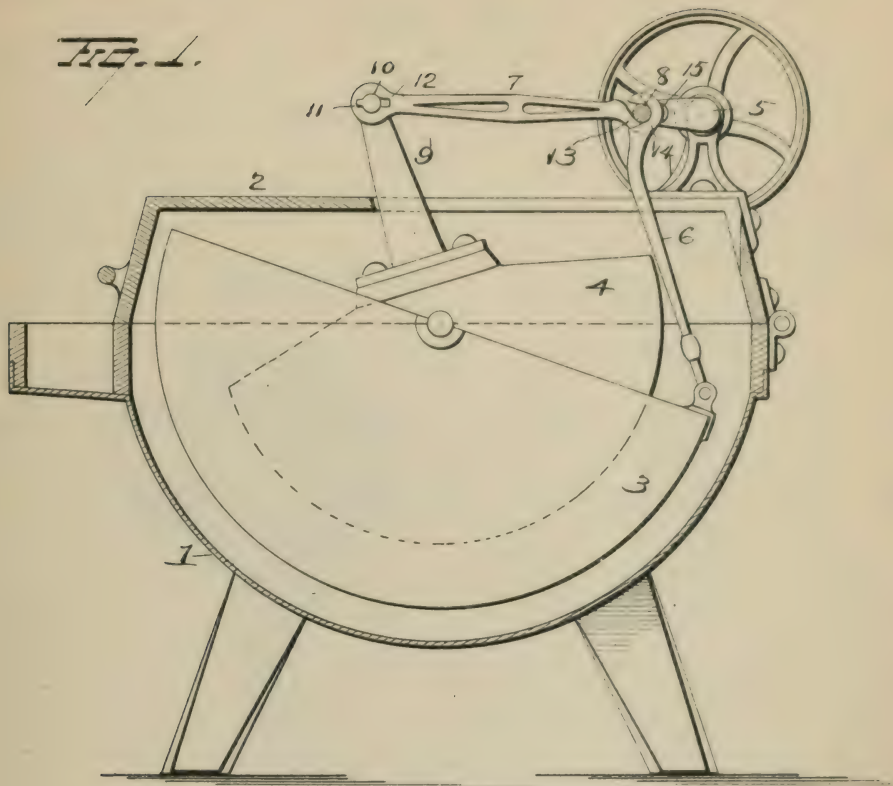
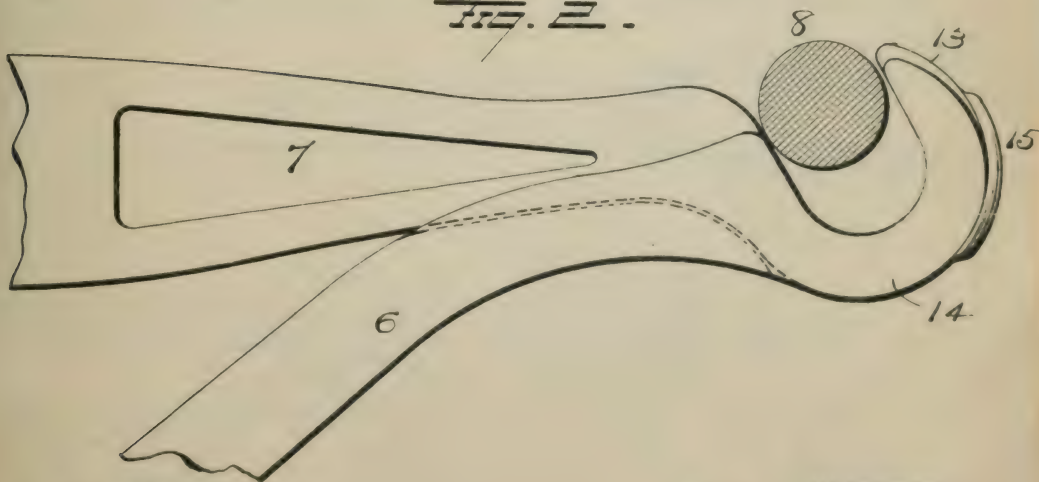


FIG. 2.



WITNESSES

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CONNECTING DEVICE.

(Application filed Aug. 7, 1901.)

2 Sheets—Sheet 2.

(No Model.)

Fig. 3.

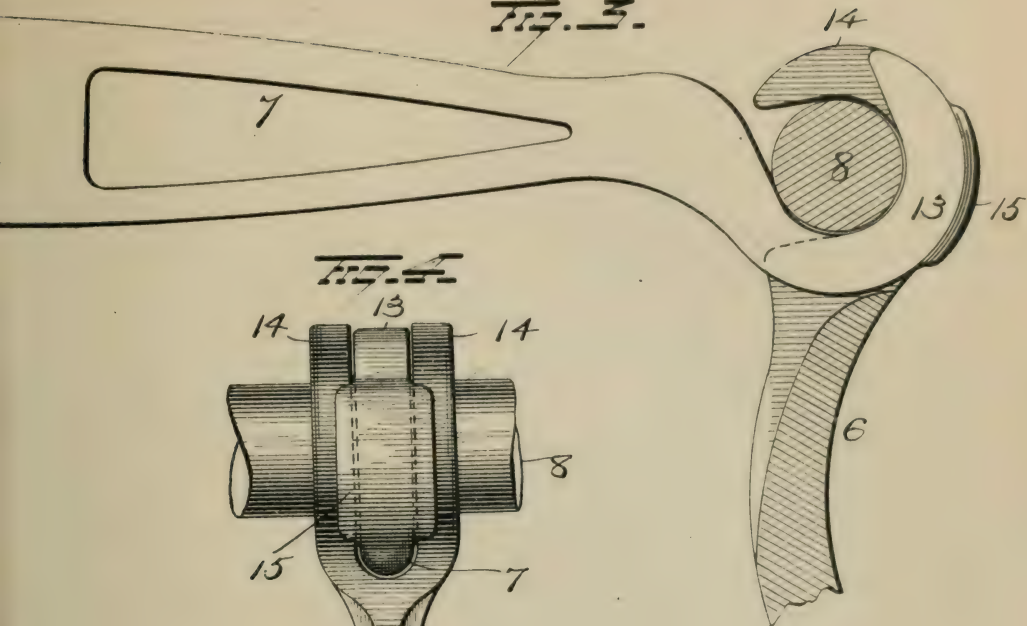


Fig. 4.

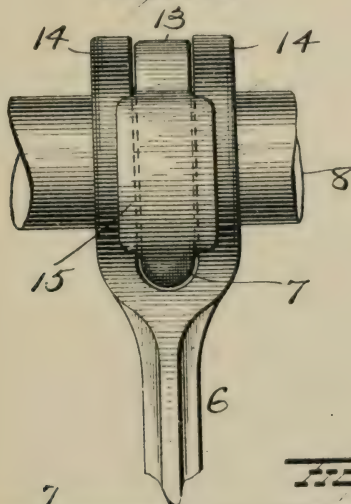
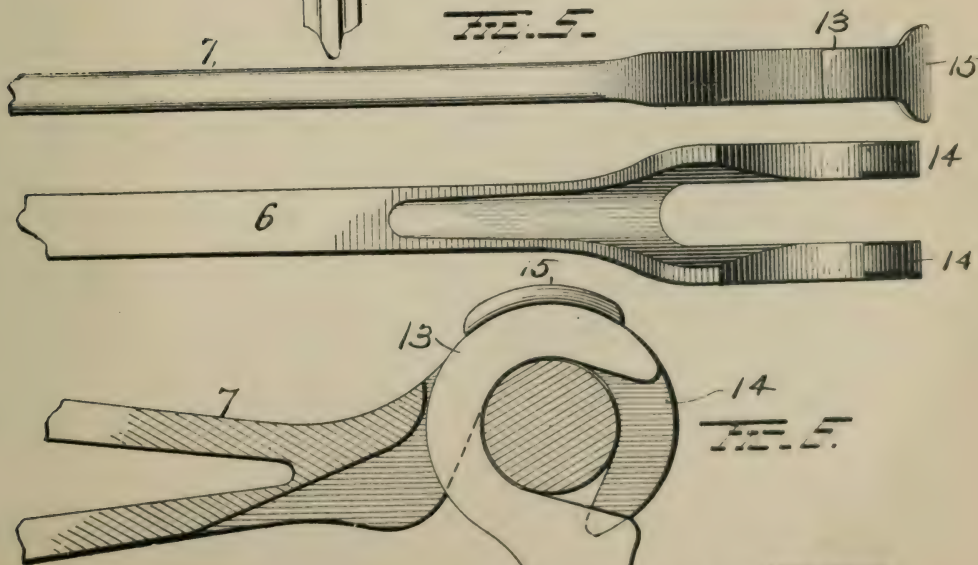


Fig. 5.



WITNESSES
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Attorney

UNITED STATES PATENT OFFICE.

JOHN R. CARTER, OF AUGUSTA, KENTUCKY, ASSIGNOR TO ERNST H. HUENEFELD, OF CINCINNATI, OHIO.

CONNECTING DEVICE.

SPECIFICATION forming part of Letters Patent No. 694,459, dated March 4, 1902.

Application filed August 7, 1901. Serial No. 71,266. (No model.)

To all whom it may concern:

Be it known that I, JOHN R. CARTER, of Augusta, in the county of Bracken and State of Kentucky, have invented certain new and useful Improvements in Connecting Devices; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in connecting devices, and more particularly to means for connecting two pitmen with a single crank-shaft in such manner as to permit their easy removal but which will effectually hold them in position when in operation.

With this object in view the invention consists in certain novel features of construction and combinations and arrangements of parts, as will be more fully hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view illustrating my improvements on a washing-machine. Figs. 2, 3, and 4 are enlarged views illustrating the various positions of the connection. Fig. 5 is a plan view of the pitmen separated, and Fig. 6 is a view illustrating a modified form of my invention.

1 represents the body of the washing-machine, and 2 the cover therefor. A lower rubber 3 is mounted to reciprocate in the body 1 and coöperates with an upper rubber 4, also mounted to operate, but in a reverse direction, in said body. A crank-shaft 5 is mounted on the cover of the body 1, and its crank-arm 8 is connected by a pitman 6 with the lower rubber 3. Another pitman 7 is connected at one end with crank-arm 8 of said shaft 5 and at its other end with an upright or lever 9, projecting upward from the upper rubber and located in an elongated slot in the cover 2. It is to the connection between these pitmen and the crank-shaft that my present invention has particular reference.

The upright or lever 9 is provided on one side, at its upper end, with a stud or pintle 10 to receive one end of pitman 7, and said stud is provided at its outer end, on one side, with a lug or key 11 to aline with a keyway 12 in the pitman 7 when the latter is in a horizontal position and pointing away from the

crank-shaft 5, and when the pitman is inserted on the stud it is thrown around to point toward the crank-shaft, and hence cannot become disconnected from the stud during the operation of the washer. The free end of this pitman 7 is provided with a hook 13, adapted to be placed on the crank-arm 8 of shaft 7, and the end of the other pitman 6 is made with double hooks 14, spaced apart sufficiently to receive the hook 13 between them, when all of said hooks will aline and can be inserted on the crank-arm 8. After said hooks are inserted on the crank-arm the pitman 6 is pivotally swung on the crank-arm to move the double hooks 14 out of alinement with the single hook 13 and is then attached to the lower rubber.

To prevent the outward movement of the double hooks from off the crank-arm, I provide the outer portion of the single hook 13 with an enlargement 15 to engage the outer portion of one or both of the double hooks, hence securely holding the same on the shaft. This enlargement 15 may be made in various ways—as, for instance, it might consist of an enlargement overlapping the outer edges of both double hooks, as shown, or it might consist of making the outer wall of the single hook 13 of greater width than its inner wall and beveling the inner faces of the double hook to receive the same. Hence I do not wish to be limited to the particular enlargement shown.

In assembling the parts the pitman 7 is first connected to the upright or lever 9, as above explained. The double hooks 14 on the end of pitman 6 are then inserted onto the single hook 13, so that they aline, and all the hooks are inserted on the lower half of the crank-arm, when the pitman 6 is turned on the crank-arm, its free end falling down through the slot in cover 2 and attached to the lower rubber 3, and when in this position the hooks will be out of alinement and their separation from the crank-arm prevented by the enlargement 15, as above explained.

By employing the double hooks 14 to receive between them the single hook 13 it is not necessary to employ shoulders on the crank-arm to hold them against lateral movement, as neither can move laterally without the

other, and hence a perfect joint is assured without the aid of other means.

5 If desired, the double hooks can be provided on pitman 7 and the single hook on pitman 6, and when so provided the hooks are assembled and first placed on the upper half of the crank-arm, as shown in Fig. 6.

10 Various slight changes might be resorted to in the general form and arrangement of these several parts described without departing from the spirit and scope of my invention, and hence I would have it understood that I do not wish to limit myself to the precise details set forth, but consider myself at liberty
15 to make such slight changes and alterations as fairly fall within the spirit and scope of my invention.

20 Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a double-pitman connection the combination of two pitmen, one having double hooks spaced apart and adapted to receive a shaft, the other pitman having a single hook

to be disposed on the shaft between the double 25 hooks and the outer portion of the single hook having an enlargement to engage the hook portion of the pitman having double hooks and lock both pitmen on the shaft when the hooks are moved out of alinement. 30

2. In a double-pitman connection, the combination of two pitmen and a shaft, one pitman having double hooks spaced apart and adapted to receive the shaft, the other pitman having a single hook to be disposed on the 35 shaft between the double hooks and the outer portion of the single hook having lateral enlargements to overlap the outer edges of the double hooks when the hooks are moved out of alinement. 40

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JOHN R. CARTER.

Witnesses:

S. W. FOSTER,

G. F. DOWNING.

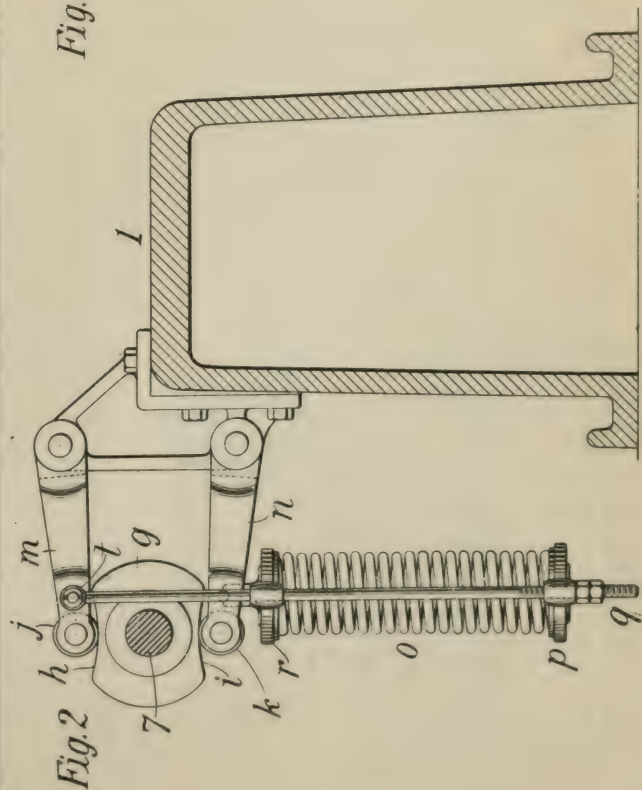
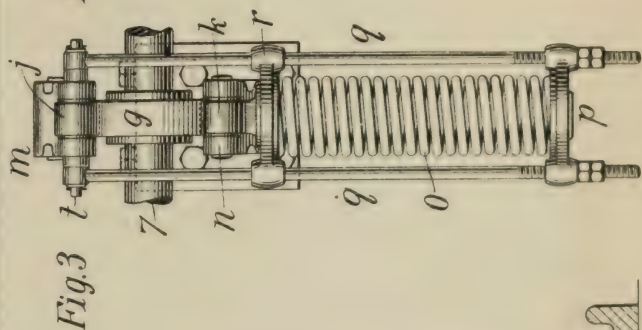
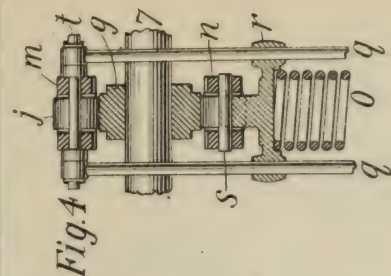
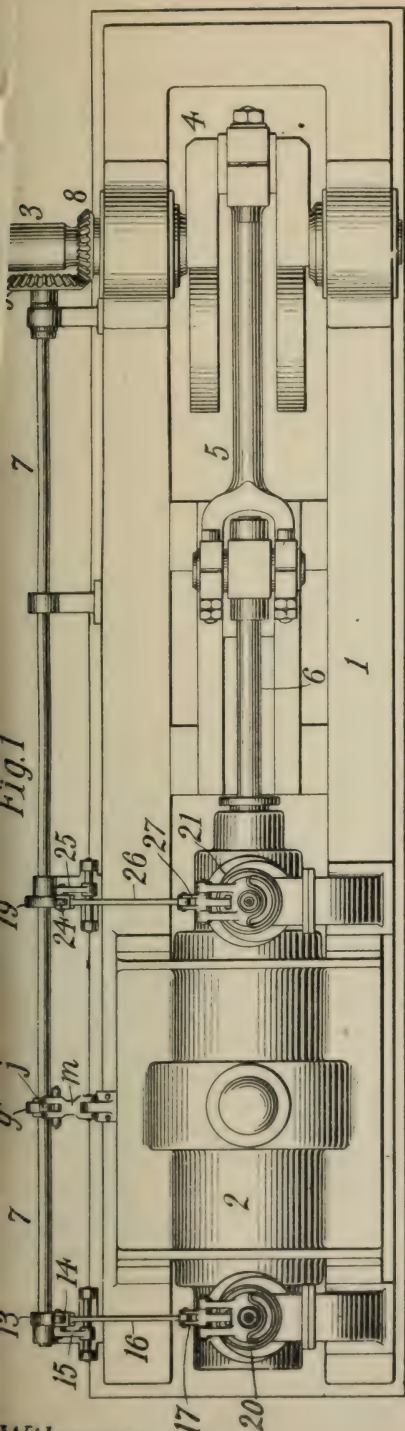
B. BOTKOWSKI.

VALVE MECHANISM FOR ENGINES.

APPLICATION FILED FEB. 25, 1903. RENEWED OCT. 13, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:
Raphael Kitter
Henry Barnes

Inventor
Boris Botkowski
by Henry P. Williams Atty

B. BOTKOWSKI.

VALVE MECHANISM FOR ENGINES.

APPLICATION FILED FEB. 25, 1903. RENEWED OCT. 13, 1903.

NO MODEL.

2 SHEETS—SHEET 2.

Fig. 5

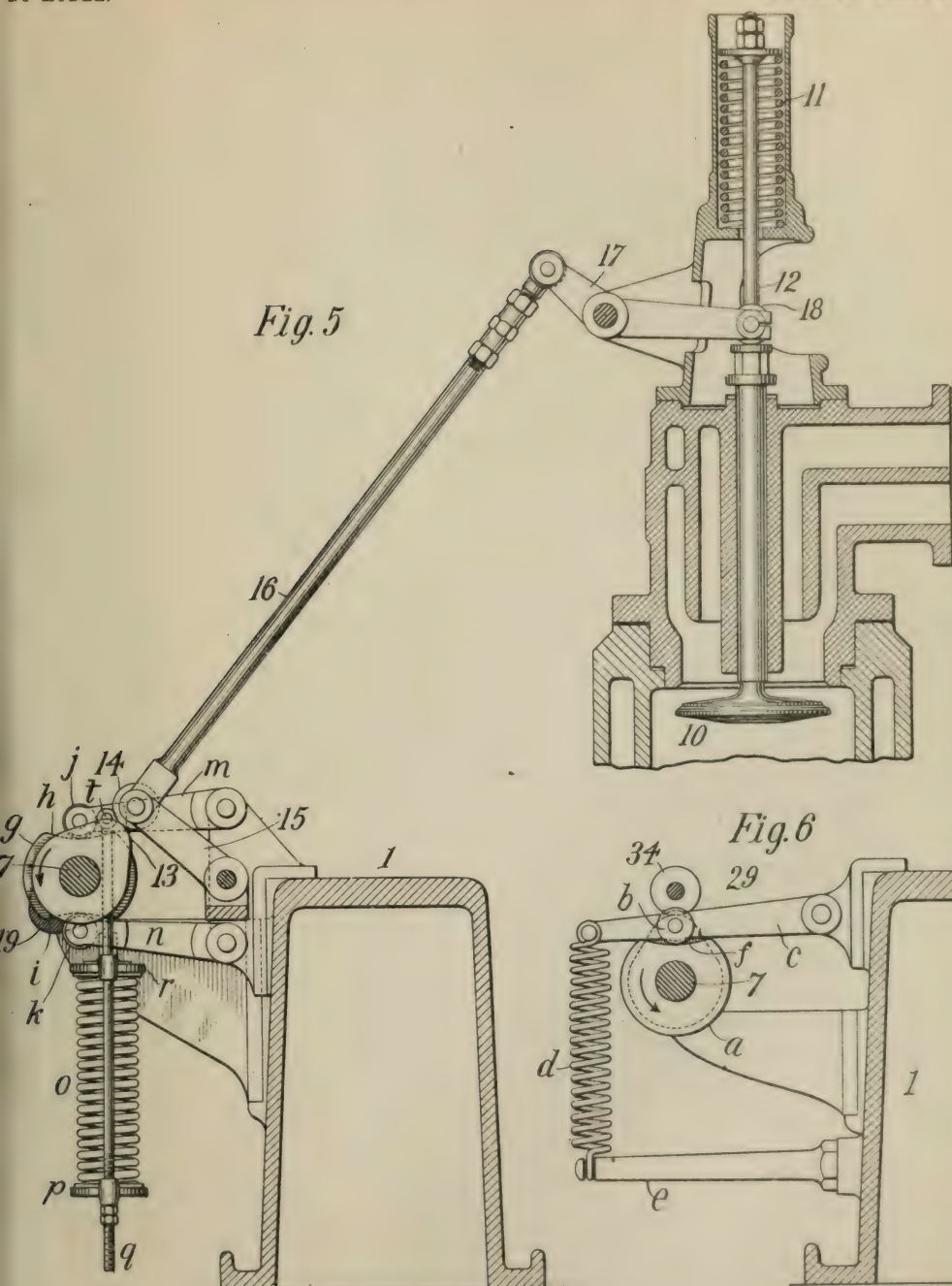
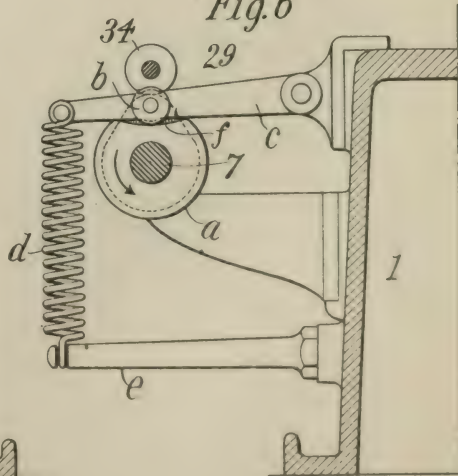


Fig. 6



Witnesses:

Russell Ketter
Henry Barnes

Inventor

Boris Botkowski

by Henry S. Williams Atty

UNITED STATES PATENT OFFICE.

BORIS BOTKOWSKI, OF NEW YORK N. Y., ASSIGNOR TO THE DE LA VERGNE REFRIGERATING MACHINE COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

VALVE MECHANISM FOR ENGINES.

SPECIFICATION forming part of Letters Patent No. 759,857, dated May 17, 1904.

Application filed February 25, 1903. Renewed October 13, 1903. Serial No. 176,928. (No model.)

To all whom it may concern:

Be it known that I, BORIS BOTKOWSKI, a subject of the Czar of Russia, residing in the borough of Manhattan, city of New York, county of New York, and State of New York, have invented certain new and useful Improvements in Valve Mechanisms for Engines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to valve mechanisms for engines, and has for its objects to counteract the variable thrusts upon a valve-shaft and to provide for a smooth and uniform rotative action of such shaft and to improve the construction and diminish the wear upon the working parts.

According to my invention I provide a resistance-controller for the valve mechanism, and my invention is particularly adapted for explosive or gas engines and includes certain combinations with the valve mechanism thereof.

I will now describe the construction of gas-engine and resistance-controller combined therewith which is shown in the accompanying drawings and will thereafter point out my invention in claims.

Figure 1 is a general plan view of a gas-engine having a valve mechanism embodying my invention. Fig. 2 is a detail end elevation of the resistance-controller. Fig. 3 is a side elevation of the same. Fig. 4 is a part section of the same. Fig. 5 is a sectional elevation of one of the valves and of the valve-shaft with the several cams thereon. Fig. 6 is an end elevation of a modified construction of resistance-controller and the single valve-cam for which it is adapted.

The gas-engine partly shown in the drawings is of the well-known Koerting double-acting two-cycle type and comprises a bed-frame 1, carrying a cylinder 2 and crank-shaft 3. The crank 4 is joined by a connecting-rod 5 to the piston-rod 6. The valve-shaft 7 receives motion from the crank-shaft 3 by means of meshing bevel-gears 8 and 9, respectively, secured to these shafts. Two puppet inlet-

valves are provided, one for each end of the cylinder, these valves being located in casings 20 and 21, respectively. These valves are of identical construction, and I have therefore shown in detail, Fig. 5, only the valve 10 for the head end of the cylinder. This valve 10 is held closed by a compressible spring 11, engaging with the valve-stem 12, and is actuated from the cam 13 on the valve-shaft 7, a cam-roller 14 engaging such cam and being carried by a pivoted arm 15 and a link 16 and the link 16 being pivotally connected to the valve-lever 17. The valve-lever 17 carries a roller or rollers 18, engaging the valve-stem 12. The cam 19 of the other inlet-valve is secured upon the valve-shaft in a position diametrically opposite to that of the cam 13 of the valve 10. The connecting parts of this valve are exactly the same as of the valve 10, comprising a cam-roller 24, pivoted arm 25, link 26, and valve-lever 27.

The parts above described are of ordinary construction in the type of gas-engines shown. It is evident that during the movement of each valve-cam which effects the opening of the corresponding inlet-valve against the resistance of the valve-spring the valve-spring exerts a backward thrust upon the valve-shaft. This movement has just been completed for the valve 10 in the position of parts shown in Fig. 5. It is also evident that during the movement of each cam which permits the closing of the corresponding inlet-valve under the resilient action of the valve-spring the valve-spring exerts a forward thrust upon the valve-shaft. Therefore as each cam opens and closes the corresponding inlet-valve and compresses and permits the extension of the corresponding valve-spring the valve-shaft receives a backward and then a forward thrust. As these engines are operated at high speed, these thrusts are, in fact, impulses or blows and cause excessive wear upon the transmission-gears and other parts and, in fact, with the slightest backlash in the bevel-gears 8 and 9 cause a constant rattling of these gears. According to my invention I provide a resistance-controller coacting with the valve-shaft, so as to

oppose resistances to the thrusts of the valve-springs, which shall be approximately or exactly equal to such thrusts, thereby counterbalancing the thrusts of the valve-springs, so that the resistance of the valve-shaft at the transmission-gearing is always a positive quantity and approximately a constant quantity and is approximately only the friction of the several bearings. Thus the transmission-gearing has only to overcome an approximately constant and slight resistance and the rotative movement of the valve-shaft will be smooth and continuous, no amount of backlash in the gearing can cause rattling of the gears, and the wear of parts will be reduced to a minimum.

The resistance-controller in simple form is illustrated in Fig. 6, wherein it is constructed to oppose the thrusts of a single valve-cam 29 on the valve-shaft 7. The cam-roller 34 of this valve-cam is shown, but other connecting parts omitted. A resistance-cam *a* is provided on the same valve-shaft 7 which coacts with a cam-roller *b*, the cam-roller being carried by a pivoted arm *c*, which is connected at its outer end to the extension-spring *d*, held at its lower end by the fixed stud *o*. The resistance-cam *a* is so shaped relatively to the valve-cam 29 that the resistance-cam roller *b* opposes an equal forward thrust to the backward thrust of the valve-cam roller 34 and an equal backward thrust to the forward thrust of the valve-cam roller 34. For example, in the position of parts shown in Fig. 6, wherein the two cam-rollers are shown in radial alinement for clearer illustration, the valve-cam roller 34 has just completed its movement away from the axis of the valve-shaft and the resistance-cam roller *b* has just completed its movement toward the axis of the valve-shaft, the valve-cam roller being at the highest point of its cam 29 and the resistance-cam roller at the lowest point of the depression *f* of its cam *a*. During this movement the two cam-rollers have applied equal and opposite thrusts to the valve-shaft, the resultant of which was zero. The next movement of these parts will be that of the valve-cam roller 34 toward the axis of the cam-shaft and of the resistance-cam roller *b* away from such axis, and these opposite movements will apply equal and opposite thrusts to the valve-shaft, so that the resultant of the thrusts from the valve-spring and the resistance-spring will be zero. Upon the completion of the strokes of the two cam-rollers both will rest upon circular portions of their cams and will rotate thereon without imparting other resistance to the rotation of the cam-shaft than the friction of the bearings, and this friction of the bearings will be the approximately constant and slight resistance will be offered to the rotation of the cam-shaft during all parts of its movement.

In the double-acting engine shown two oppo-

sitely-arranged valve-cams 13 and 19 are provided, as above described, and by reason of the diametrically opposite arrangement of these cams I provide a resistance-cam *g* with diametrically opposite depressions *h* and *i*. The cam-rollers *j* and *k*, respectively, are carried by pivoted arms *m* and *n*, respectively, and the resistance-spring *o* presses at its lower end against the cross-head *p*, this cross-head being connected by rods *q q* to the upper cam-roller arm *n*, and presses at its upper end against a cross-head *r*, sliding on said rods *q q*. The rods *q q* are pivotally connected to the upper cam-roller arm *m* by a pin *t*, and the upper cross-head *r* thrusts against a pin *s* of the lower cam-roller arm *n*, and the angular arrangement is such that these pins are always in alinement with the rods *q q*. By this double cam the resistance of the spring *o* is applied at both cam-rollers in the direction toward the axis of the valve-shaft and is thus doubled in its resistance to the forward and backward thrusts upon the valve-shaft, and the resistance-controller as a whole is operated first to oppose the thrusts of the movement of one valve and then in diametrically opposite position to oppose the thrusts of the movement of the other valve, and thus the same parts with the valve-shaft in diametrically opposite positions oppose the thrusts resulting from the movements of both inlet-valves.

It is evident that various modifications may be made in the constructions shown and above particularly described within the spirit and scope of my invention.

What I claim, and desire to secure by Letters Patent, is—

1. The combination with a valve-shaft and means for actuating a valve therefrom adapted to impart variable thrusts thereto, of a resistance-controller comprising a cam and a resisting device coacting therewith to apply to the valve-shaft opposed resistances to the thrusts of the valve mechanism.

2. The combination with a valve-shaft, a cam thereon, a valve actuated by such cam and a spring opposing the movement of the valve in one direction and compelling the movement of the valve in the other direction, of a resistance-controller comprising another cam on the valve-shaft and a resisting device coacting therewith to apply to the valve-shaft opposed resistances to the thrust of the valve-spring.

3. The combination with a valve-shaft, a cam thereon and valve actuated by such cam and a spring opposing the movement of the valve in one direction and compelling the movement of the valve in the other direction, of a resistance-controller comprising another cam on the valve-shaft and a spring coacting therewith to oppose the thrusts of the valve-spring.

4. The combination with a valve-shaft, two valves and valve-springs, diametrically oppo-

site cams on the valve-shaft, one cam for each valve, each cam being arranged to cause the movement of its valve in one direction against the resistance of the valve-spring and to permit the movement of the valve in the other direction under the resilient action of the valve-spring, of a resistance-controller comprising another cam on the valve-shaft with diametrically opposite depressions and rises and a spring coacting therewith and arranged to apply its resistance at diametrically opposite parts of the valve-shaft to oppose the thrusts of the valve-springs.

5. In a gas-engine, in combination, a valve-shaft geared to the crank-shaft, two inlet-valves and valve-springs, the valve-cam 13 on the valve-shaft and the cam-roller 14 coacting

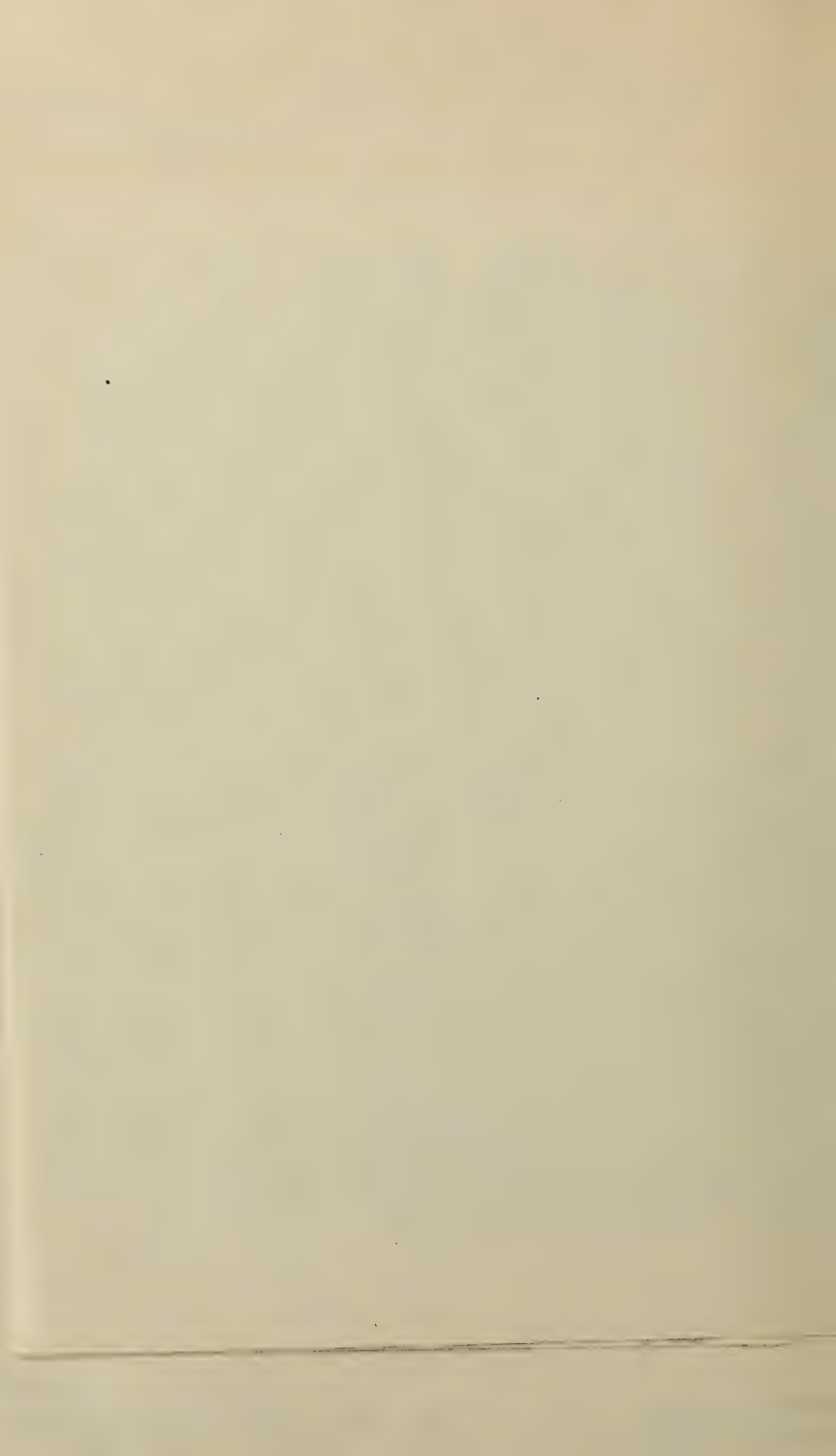
therewith and connected to one inlet-valve, another valve-cam 19 on the valve-shaft and the cam-roller 24 coacting therewith and connected to the other inlet-valve, the resistance-cam *g* also on the valve-shaft, the cam-rollers *j* and *k* coacting therewith, the pivoted arms *m* and *n*, each carrying one of such rollers, the cross-heads *p* and *r* each connected with one of such pivoted arms, and the resistance-spring *o* working between such cross-heads, substantially as set forth.

In testimony whereof I have affixed my signature in presence of two witnesses.

BORIS BOTKOWSKI.

Witnesses:

HENRY D. WILLIAMS,
LIVINGSTON EMERY.



W. M. WILKIN.
LOG TURNING MECHANISM.
APPLICATION FILED APR. 27, 1904.

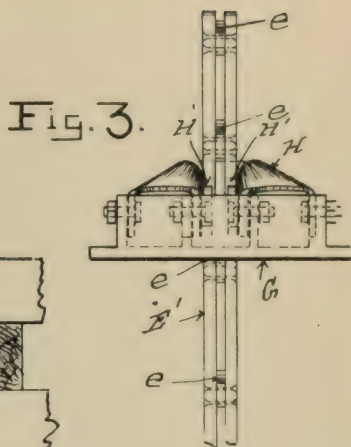
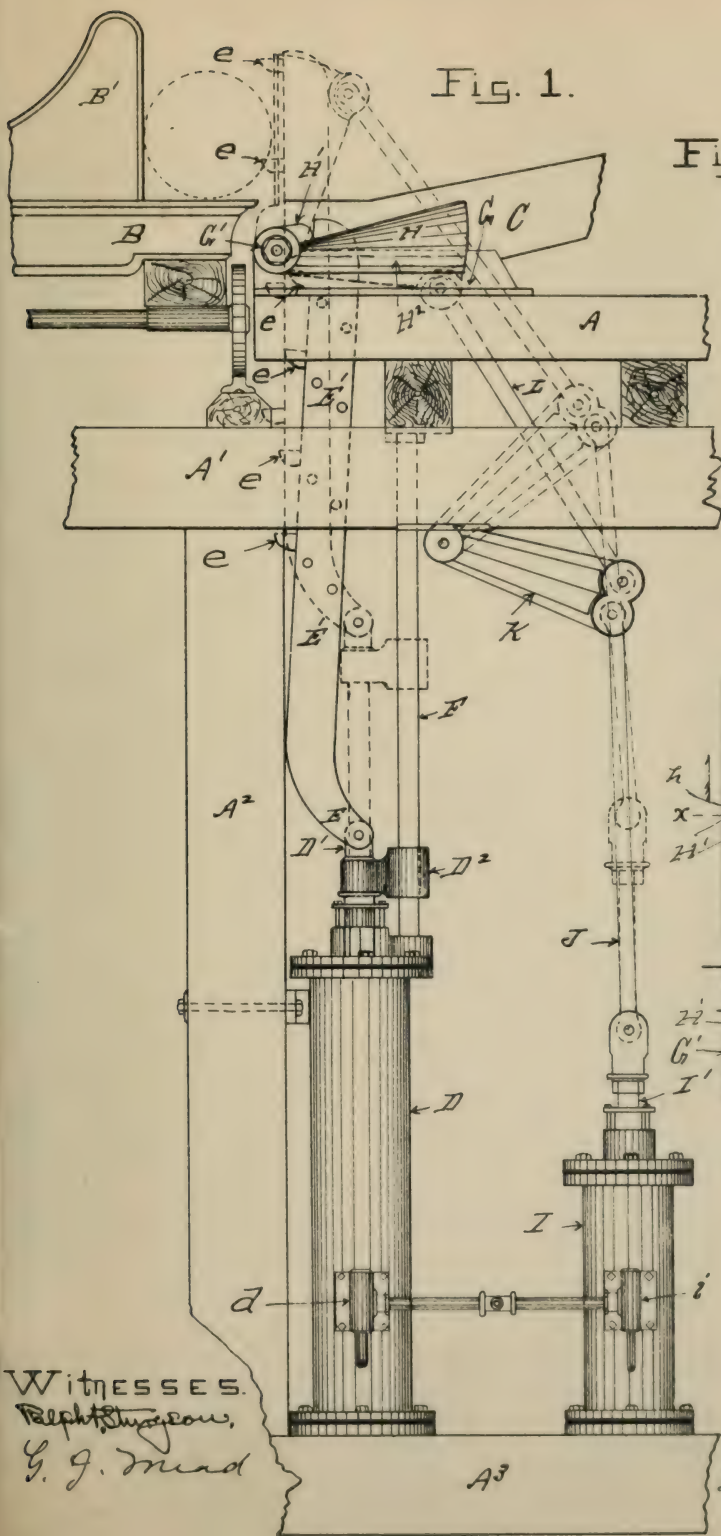


Fig. 2.

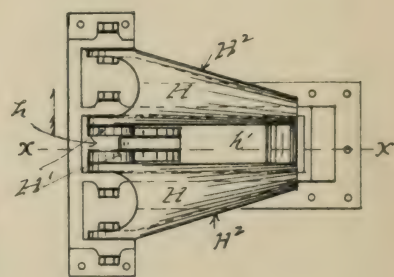
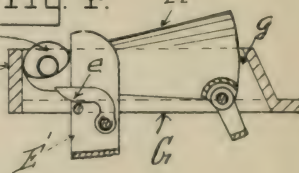


Fig. 4.



WITNESSES.
 Ralph Sturgeon,
 G. J. Mead

Inventor.
William M. Wilkin
By J. R. & H. M. Sargrove
attys.

UNITED STATES PATENT OFFICE.

WILLIAM M. WILKIN, OF MOBILE, ALABAMA.

LOG-TURNING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 778,522, dated December 27, 1904.

Application filed April 27, 1904. Serial No. 205,159.

To all whom it may concern:

Be it known that I, WILLIAM M. WILKIN, a citizen of the United States, residing at Mobile, in the county of Mobile and State of Alabama, have invented certain new and useful Improvements in Log-Turning Mechanism; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, forming part of this specification.

This invention relates to log-turning mechanism for sawmills, and has for its object the construction of a log-turner with an auxiliary mechanism for rolling a log from a logway to and upon a saw-carriage, which mechanism also operates not only to force the toothed turning-bar against the log during its upward traverse, but to move the tooth-bar back from the log when it is desired to move the tooth-bar downward, whereby the teeth of the tooth-bar can be withdrawn from the log in a direct line, and thereby prevented from unnecessarily mutilating it.

The features of my invention are hereinafter fully set forth and described, and illustrated in the accompanying drawings, in which—

Figure 1 is a side view in elevation of a log-turning mechanism embodying my invention with sections of a logway and saw-carriage. Fig. 2 is a top or plan view of a portion of the log-turning mechanism. Fig. 3 is a front view in elevation of the same looking toward the logway. Fig. 4 is a vertical section of the part shown in Fig. 2 on the line *x x*.

In the accompanying drawings, illustrating this invention, A A' A^2 A^3 represent a portion of the mill-frame, B a saw-carriage, B' the carriage-knees, and C a logway, all of the ordinary construction. The turning-bar cylinder D is mounted on the base A^3 of the mill-frame and is provided with a valve mechanism d of the usual construction, and from the piston (not shown) in the cylinder D a piston-rod D' extends upward to and is pivoted to the offset lower end E of the toothed turning-bar E' .

On the upper end of the piston-rod D' there is a guide D^2 , operating on a vertical slide F , secured to the head of the cylinder D and to the mill-frame, so as to resist the side thrust of the bar E' caused by the offset E therein.

On the part A of the mill-frame I secure a slotted plate or frame G , with its front end G' toward the saw-carriage B . This front end G' of the frame G is made of considerable width, so as to provide an adequate base therefor, and in this front end G' , I pivot a bifurcated lever or crowding-bar H . This crowding-bar is provided on its pivoted end with cam-surfaces H' H' , with a vertical opening h between them, and in the rear thereof the opening h' is the thickness of the cam-surfaces H' H' wider, so that the tooth-bar E will operate up and down therein with the front edges thereof in contact with the cam-surfaces H' H' and with the teeth e thereon passing up through the opening h between the cam-surfaces H' H' . The upper surfaces of the arms of the lever or crowding-bar H are preferably made with curved wings H^2 thereon, which curve downward over the upwardly-extending sides g of the frame G . The upper surfaces of the sides of the crowding-bar H are rounded from the inside faces of the opening h' therein to the lower edges of the wings h^2 thereon, as illustrated in Figs. 1, 2, and 3, so that when the crowding-bar H is forced against a log moving longitudinally on the saw-carriage B there is no surface on the crowding-bar to catch on a knot or other obstruction on the log, and thereby be forced sidewise and broken.

For operating the lever or crowding-bar H , I secure a cylinder I upon the base A^3 of the mill-frame, provided with suitable valve mechanism i of the usual construction, and from a piston (not shown) in the cylinder I a piston-rod I' extends upward to and is pivoted to the lower end of a lever K , the opposite end of which is pivoted to the mill-frame. To the free end of the lever K , I pivot another link L , which extends to and is pivoted to the free end of the lever H , as illustrated in Figs. 1 and 4. This mechanism operates to raise and lower the free end of the lever or crowding-bar H , as desired. In operation the operator can operate the crowding-bar mechanism in—

dependently of the tooth-bar mechanism to roll a log from the logway C upon the carriage B and against the carriage-knees B' and hold it there, if desired, while the tooth-bar E is run upward to roll the log over, as desired, the cross-bar at the rear of the lever or crowding-bar H also operating when the tooth-bar is raised to press against the rear edge of the tooth-bar and retain the teeth thereof in contact with the log and prevent their tearing out therefrom, and when the crowding-bar H is moved back to its normal position the cam-surfaces H' thereon operate to move the tooth-bar back from the log in a direct line, so as to remove the teeth therefrom without unduly mutilating the log.

Having thus fully described my invention, so as to enable others to construct and operate the same, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a log-turning mechanism, the combination of a slotted plate or frame adapted to be secured to the mill-frame with its front end toward the front of a saw-carriage, a bifurcated crowding-bar pivoted in the end of said frame toward the saw-carriage, a tooth-bar movable up and down through the opening of said bifurcated lever, cam-shaped shoulders on the pivotal end of said bifurcated crowding-bar, adapted to engage the front edge of the tooth-bar at each side of the teeth thereon, means for moving the tooth-bar up and down, and means for raising and lowering the free end of said bifurcated lever, substantially as set forth.

2. In a log-turning mechanism, the combi-

nation of a slotted frame adapted to be secured to the mill-frame with its front end toward and in front of the saw-carriage, a bifurcated crowding-bar having its open end pivoted in the front end of said frame, a tooth-bar movable up and down through the opening in said bifurcated crowding-bar, cam-shaped shoulders on the pivotal end of said bifurcated crowding-bar adapted to engage the front edge of the tooth-bar at each side of the teeth therein when the free end of the crowding-bar is being lowered to its normal position, a surface on the rear or free end of said crowding-bar adapted to engage the rear edge of the tooth-bar when the crowding-bar is raised, cylinder, piston, and guide mechanism connected with and moving the tooth-bar up and down, and cylinder, link and lever mechanism connected with and operating the bifurcated crowding-bar mechanism, substantially as set forth.

3. In a log-turning mechanism, the combination of a slotted frame, adapted to be secured to a mill-frame floor in front of a saw-carriage, a bifurcated crowding-bar pivoted in the front end of said frame, curved and rounded upper edges on said crowding-bar, cam-surfaces on the inner faces of the pivoted end of said crowding-bar, and mechanism for operating said crowding-bar, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM M. WILKIN.

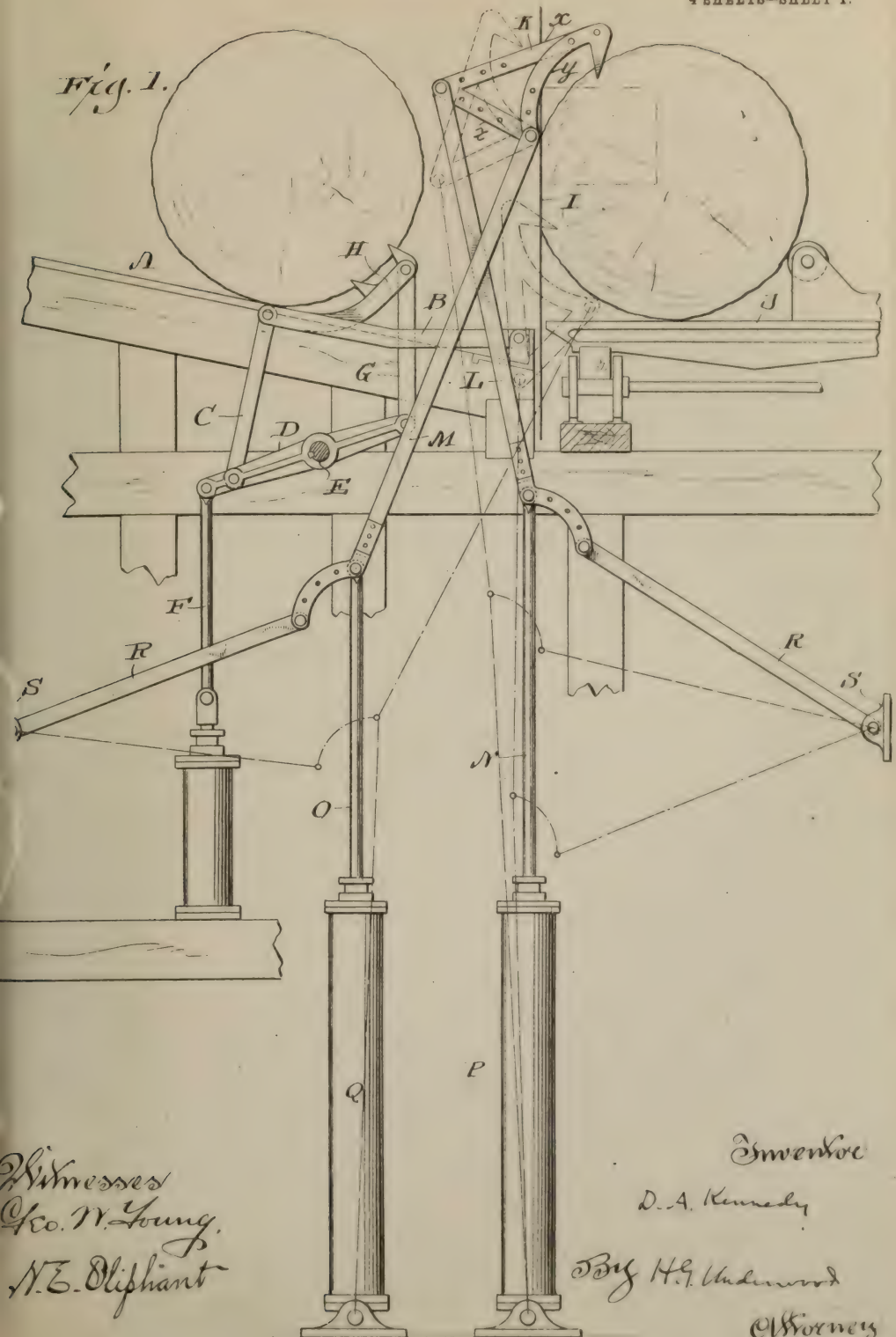
Witnesses:

RICHARD W. STOUTZ,
IRVING VAUTROTT.

D. A. KENNEDY.
LOG TURNER.

APPLICATION FILED APR. 26, 1905.

4 SHEETS—SHEET 1.



D. A. KENNEDY.
LOG TURNER.

APPLICATION FILED APR. 26, 1906.

4 SHEETS—SHEET 2.

Fig. 2.

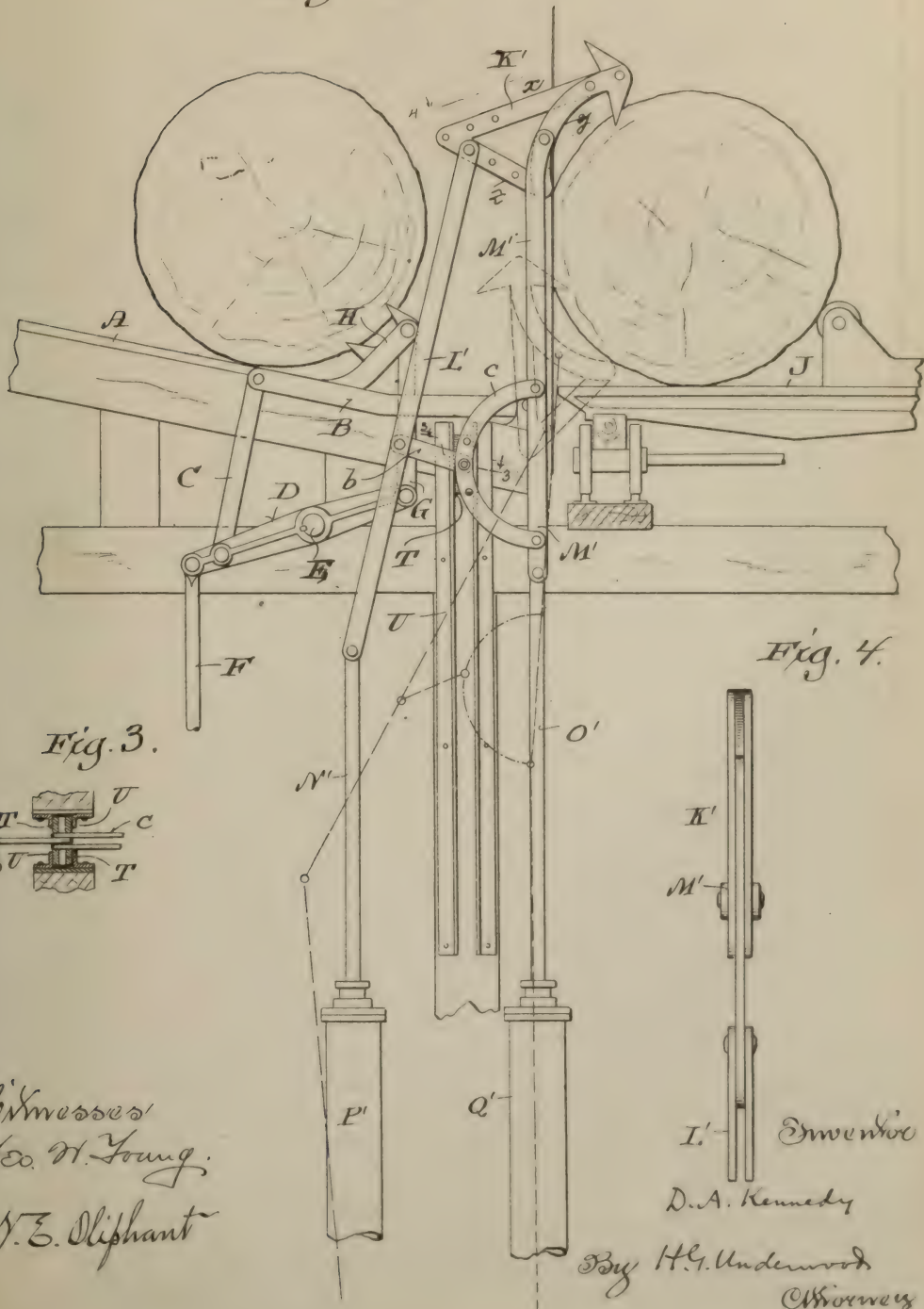
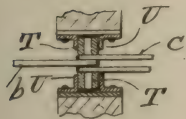


Fig. 4.

Inventor
D. A. KennedyBy H. G. Underwood
Attorney

Fig. 3.

Witnesses
Geo. H. Young.
N. E. Oliphant

D. A. KENNEDY.
LOG TURNER.

APPLICATION FILED APR. 26, 1905.

4 SHEETS—SHEET 3.

Fig. 6.

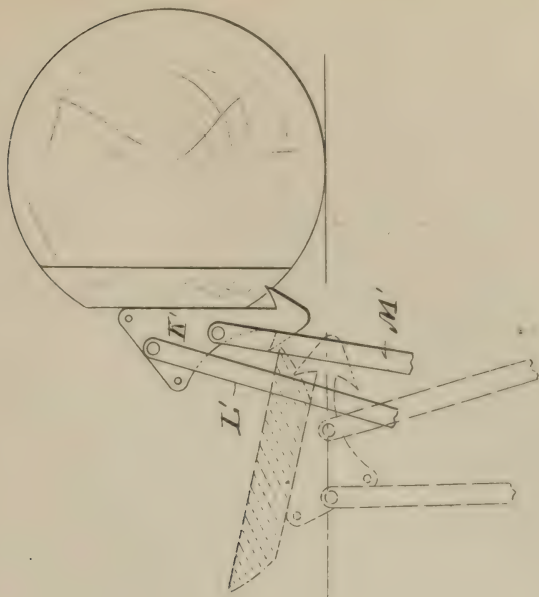
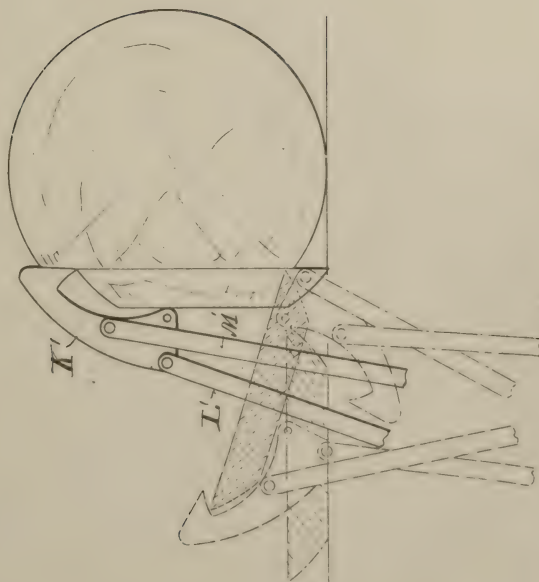


Fig. 5.



Inventor

D. A. Kennedy

By H. G. Underwood

Attorney

Witnesses
Geo W Young

N. E. Oliphant

D. A. KENNEDY.
LOG TURNER.

APPLICATION FILED APR. 26, 1905.

4 SHEETS—SHEET 4.

Fig. 9.

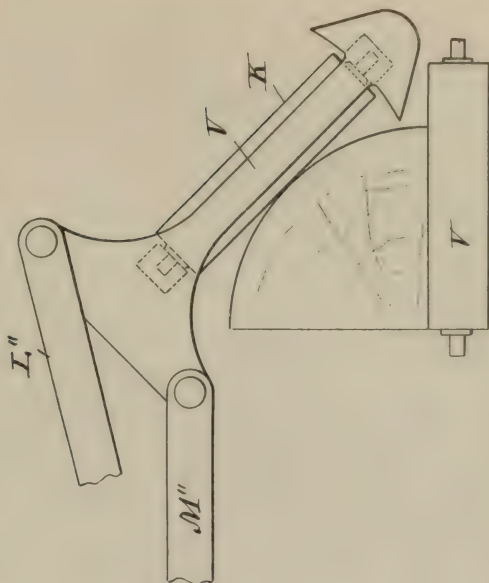


Fig. 8.

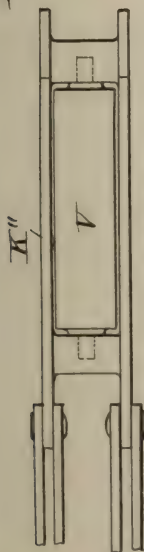
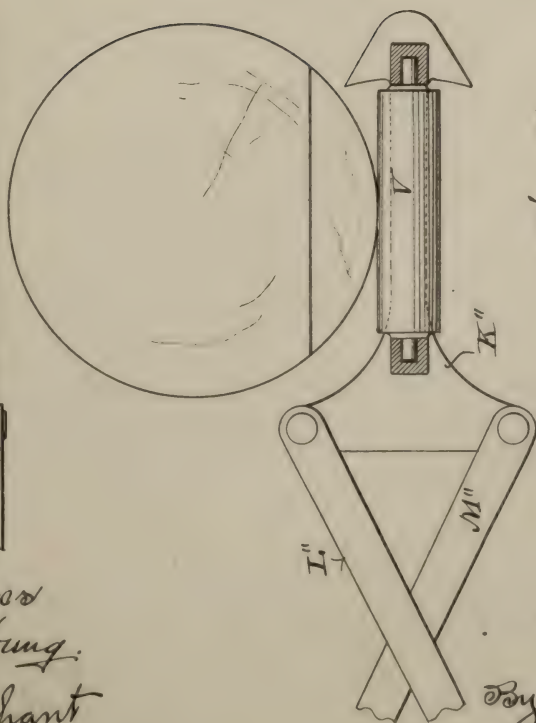
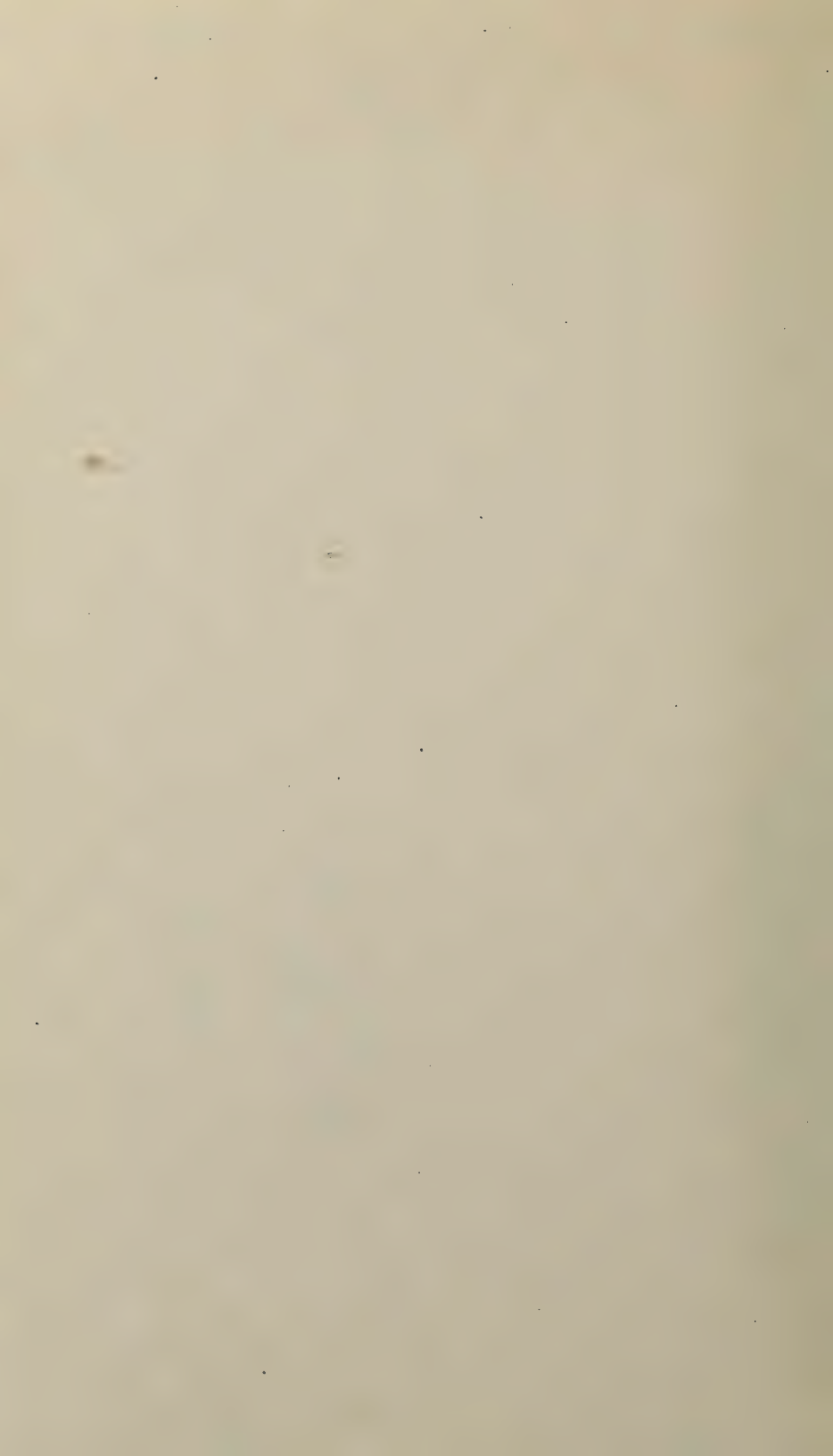


Fig. 7.



Witnesses
Geo. W. Young.
N. E. Sliphant

Inventor
D. A. Kennedy
By H. G. Underwood
Attorney



DONALD A. KENNEDY, OF ASHLAND, WISCONSIN.

LOG-TURNER.

No. 852,231.

Specification of Letters Patent.

Patented April 30, 1907.

Application filed April 26, 1905. Serial No. 257,404.

To all whom it may concern:

Be it known that I, DONALD A. KENNEDY, a citizen of the United States, and a resident of Ashland, in the county of Ashland and State of Wisconsin, have invented certain new and useful Improvements in Log-Turners; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention consists in certain peculiarities of construction and combination of parts herein specified with reference to the accompanying drawings and subsequently claimed, its object being to provide simple, economical and efficient log-turners having the various uses and advantages hereinafter set forth.

Figures 1 and 2 of the drawings represent elevations of as many different forms of my improved log-turner, and also illustrate a log-deck and log-carriage: a slide and guide shown in Fig. 3, being omitted in Fig. 2; Fig. 3, a sectional view of a fragment of one form of the log-turner, the same being indicated by lines 3—3 in Fig. 2; Fig. 4, a plan view of another fragment of said log-turner indicated by line 4—4 in said Fig. 2; Figs. 5 and 6, diagrams illustrating operations of the log-turner; Fig. 7, a side elevation, partly in section, of a fragment of another form of the log-turner employed as a support for a moving plank and log; Fig. 8, a back view of said fragment of the latter form of the invention, and Fig. 9, a side elevation of the same opposing a log-quadrant supported on a re-saw roller.

Referring by letter to the drawings, A indicates a log-deck, B one of a plurality of parallel skids in pivotally adjustable connection with the incline of said deck, the upper end of the skid being in pivotal connection with a vertically disposed pitman C likewise connected to an arm of a lever D fast on a rock-shaft E and connected to a pitman F that is coupled to a suitable actuating device. Said pitman is shown coupled to the rod of a piston (not shown) that is reciprocated by steam or other fluid-under-pressure, in a suitably arranged cylinder. Another arm of the lever is connected, by a link G, with a stop-bar H loose at one end on the pivot of said skid, the construction and arrangement of parts thus far described being analogous to what has been previously set forth in my Patent 778,366, of December 27, 1904. A saw I is shown between the log-deck and the line of travel of a log-carriage J, this carriage

being of ordinary construction. The log-turner herein particularly set forth is positioned in practice similar to those ordinarily employed, and in any of its several forms, it comprises an approximately triangular canter-head having one or two hook-points at the apex thereof and a pair of pitmen (crossed or otherwise) in connection with said head, these pitmen being also coupled to the rods of pistons reciprocated, by steam or other suitable fluid-under-pressure, in preferably oscillative cylinders. The connection of each pitman with the canter-head is adjustable or otherwise, as preferred for various operations, and each connection constitutes an axis for said head.

In Figs. 1 and 2, the canter-head K of the log-turner has a straight side *x* and a curvilinear side *y*. Adjacent to its sides and base *z* in Fig. 1, the canter-head is provided with a series of apertures, and crossed pitmen L, M, are held in adjustable connection with said head, by pivot-bolts engaging selected apertures in the series. By having the pitmen in adjustable connection with the canter-head, the leverage on same may be varied. The pitmen are respectively coupled to the rods N, O, of pistons that have their reciprocation in cylinders P, Q, these cylinders being preferably pivoted so as to be oscillative. In preferably adjustable connection with the lower offset segment end of each pitman is a link R that is also in connection with a bracket S stationary on a suitable support. Links of different length may be employed to connect the pitmen and brackets aforesaid, the function of the links being to guide the piston-rods N, O, in substantially rectilinear lines, the cylinders P, Q, being oscillative to compensate for slight departure of said rods from rectilinear lines due to the arc of movement of the outer ends of said links.

In Fig. 2, the pitmen L', M', are not crossed, but the pitman L' is connected by a link *b* with a segmental projection *c* of the pitman M', and this pitman and the link are in connection with a slide T for which a vertical guide U is provided. The pitman-projection *c* is provided with a plurality of pivot-pin apertures to provide for adjustable connection therewith of the link *b*, and the function of said link and guided pitman-projection is the same as the links R in connection with the crossed pitmen L, M, in Fig. 1. It being understood that the pivot-pin connecting the link *b* and pitman-projection *c* also

engages the adjacent slide T. The canter-head K' of the log-turner shown in Fig. 2, has two hook-point projections at its apex in opposite directions, while in Fig. 1, said head has a single hook-point on its curvilinear side. The canter-head shown in Figs. 1, 2 and 4, comprises a plurality of plates bolted together, and each pitman is shown as comprising a pair of parallel plates straddling said head, as is clearly shown in Fig. 4. In Fig. 3, it is shown that the segmental projections *c* of the plates pertaining to the pitman M' straddle the link *b* to which they are connected, and the slide in connection with said projections and link comprises two blocks each having its own guide.

In Figs. 7, 8 and 9, the canter-head K'' of the log-turner is a two hook-point device comprising a pair of plates spaced apart, the whole being a single casting or otherwise, and a roller V is journaled in the spacers to project in opposite directions from said head longitudinally of the same. In Figs. 1 and 2 the canter-head is shown by full lines, in position prior to commencing to turn a log on the carriage, and fluid-under-pressure being properly applied in the cylinders P, Q, or P', Q', a straight downward motion is had by said head. By increasing the pull of the piston rod N or N', the log will be turned in the direction of its circumference, the canter-head keeping the same relative position as when the operation begun. Now by pushing the pitman M or M' upward and pulling the pitman L or L' downward, the canter-head is swung approximately one quarter of a turn on one of its pivots to the position shown by dotted lines, after which a slight upward movement of said pitman L or L' and downward movement of said pitmen M or M' will result in the point of said head being released from the log and dropped below the deck-line. At the proper time, the canter-head is again brought into engagement with the log, by proper manipulation of the pitmen connecting it with the piston-rods, the approach of said head to attach said log being shown by dotted lines in Fig. 1. When the log is squared, the canter-head is manipulated by the piston-rods and pitmen to hook over the upper outer edge of the timber prior to a turning operation, said timber being indicated by dotted lines in Fig. 1. The turning operation for the timber is the same as for a log.

In Fig. 5, it is shown that the canter-head may be manipulated to lower a plank cut from a log, the various positions of said head being shown by full and dotted lines. The canter-head in said Fig. 6 is of the same form as the one shown in Fig. 2, and is shown adjusted to have the back point or hook thereof engage a plank to support the same when separated from the log. It is also shown, by dotted lines, in Fig. 6, that the canter-head

may be manipulated to lower and push said plank away from a vertically cutting saw.

In Fig. 7, the canter-head having a roller therewith is shown employed to support a plank and log while in motion in a direction opposite to the lower straight portion of a horizontal band-saw, and in Fig. 9, the same form of head is shown, as a means for holding a log-quadrant on a re-saw roller while in motion, the roller V with said head being in contact with said log-quadrant.

Having thus described my invention, what I claim as new, and desire to secure by Letters-Patent, is:—

1. A log-turner comprising a canter-head of approximately triangular form hook-pointed at the apex as well as provided with a series of apertures adjacent to its sides and base, and pitmen in pivot-bolt connection with selected apertures in the series.

2. A log-turner comprising a canter-head of approximately triangular form hook-pointed at the apex, a roller journaled in connection with said head longitudinally of the same to project therefrom in opposite directions, and pitmen in connection with the aforesaid head for which each connection constitutes an axis.

3. A log-turner comprising a canter-head of approximately triangular form hook-pointed at the apex, pitmen having ends thereof in pivotal connection with said head, piston-rods with which the other ends of the pitmen are in pivotal connection, oscillative cylinders in which the rods aforesaid are reciprocalative, and means in connection with said pitmen for guiding the piston rods in substantially rectilinear lines, oscillation of the cylinders serving to compensate for slight departure of said rods from said lines incidental to the movements of said pitmen and their connections.

4. A log-turner comprising a canter-head of approximately triangular form hook-pointed at the apex, pitmen having ends thereof in pivotal connection with said head, piston-rods with which the other ends of the pitmen are in pivotal connection, oscillative cylinders in which the rods aforesaid are reciprocalative, a slide and vertical guide for same, and a link connecting one of the pitmen with a projection of the other, a pivot-pin joining the link and pitman projection being in connection with the slide aforesaid.

5. A log-turner comprising a canter-head of approximately triangular form hook-pointed at the apex, pitmen having ends thereof in pivotal connection with said head, piston-rods with which the other ends of the pitmen are in pivotal connection, oscillative cylinders in which the rods aforesaid are reciprocalative, a slide and vertical guide for same, a segment-projection of one of the pitmen, and a link by which adjustable connection is had of the other pitman with the seg-

ment-projection of the one aforesaid, a pivot-pin joining the link and pitman-projection being in connection with the slide aforesaid.

6. A log-turner comprising a canter-head of
5 approximately triangular form hook-pointed at the apex, a pair of pitman each in pivotal connection with the head, actuating mechanism for the pitmen, and means controlling the movement of said pitmen to effect a combined forward pull and rock of the canter-head in proportion to the roll of the log turned by same, whereby the relative position of said head with respect to said log remains the same throughout the turning operation and pressure is exerted against the
10 aforesaid log toward adjacent head-blocks.
15 7. A log-turner comprising a canter-head

of approximately triangular form hook-pointed at the apex in opposite directions, one of its sides being curvilinear and the other straight; and means in conjunction with said head to present either side of same to the log, and to vary the manipulation of said head with respect to turning the log or for supporting and lowering a plank cut therefrom.

In testimony that I claim the foregoing I have hereunto set my hand at Ashland, in the county of Ashland and State of Wisconsin in the presence of two witnesses.

DONALD A. KENNEDY.

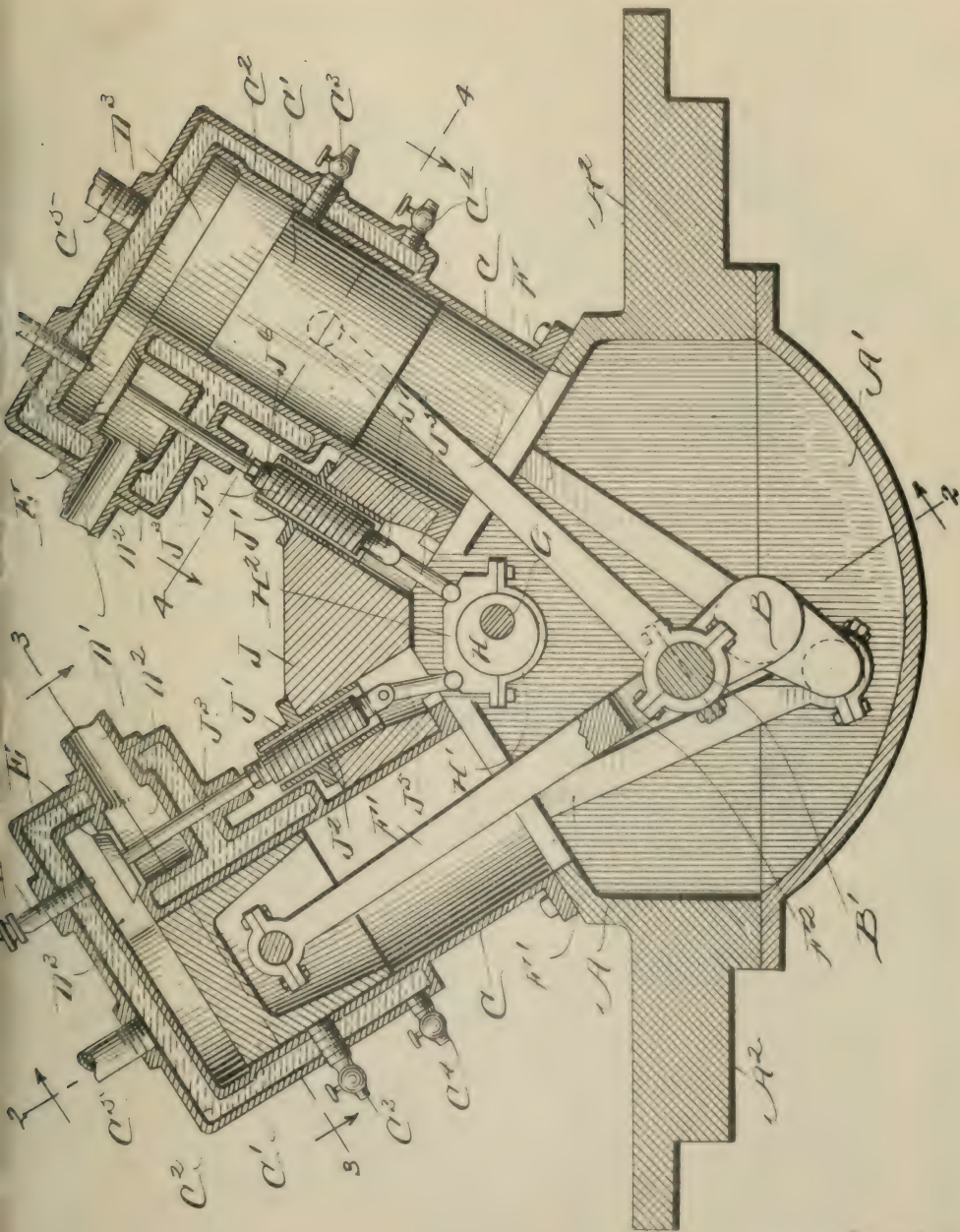
Witnesses:

J. D. KENNEDY,
DAVID McGRATH.

PATENTED DEC. 31, 1907.

G. W. STANLEY.
GASOLENE ENGINE.
APPLICATION FILED AUG. 20, 1906

3 SHEETS—SHEET 1.



Inventor

G. W. Stanley.

By Oliver & Brock

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3 SHEETS—SHEET 2.

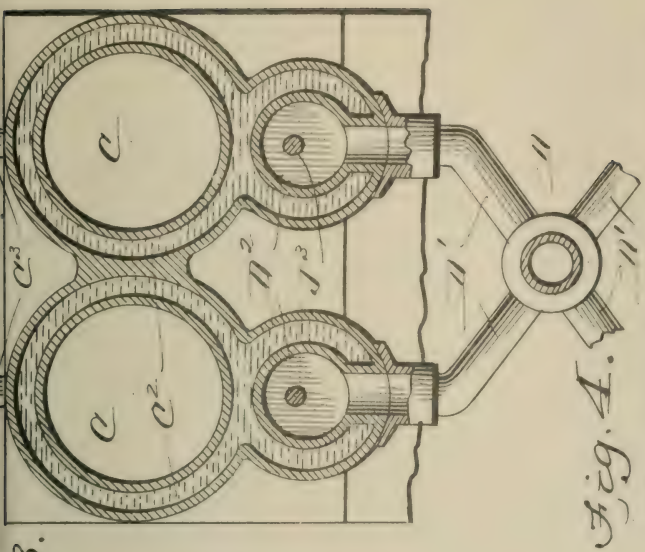


Fig. 4.

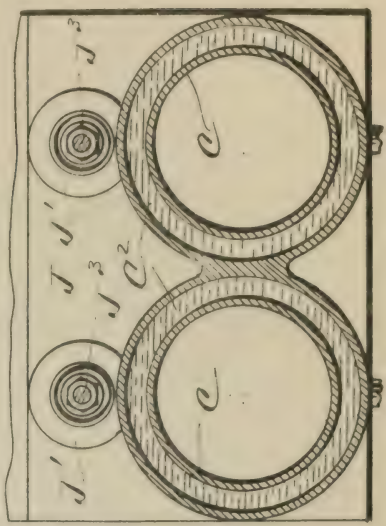
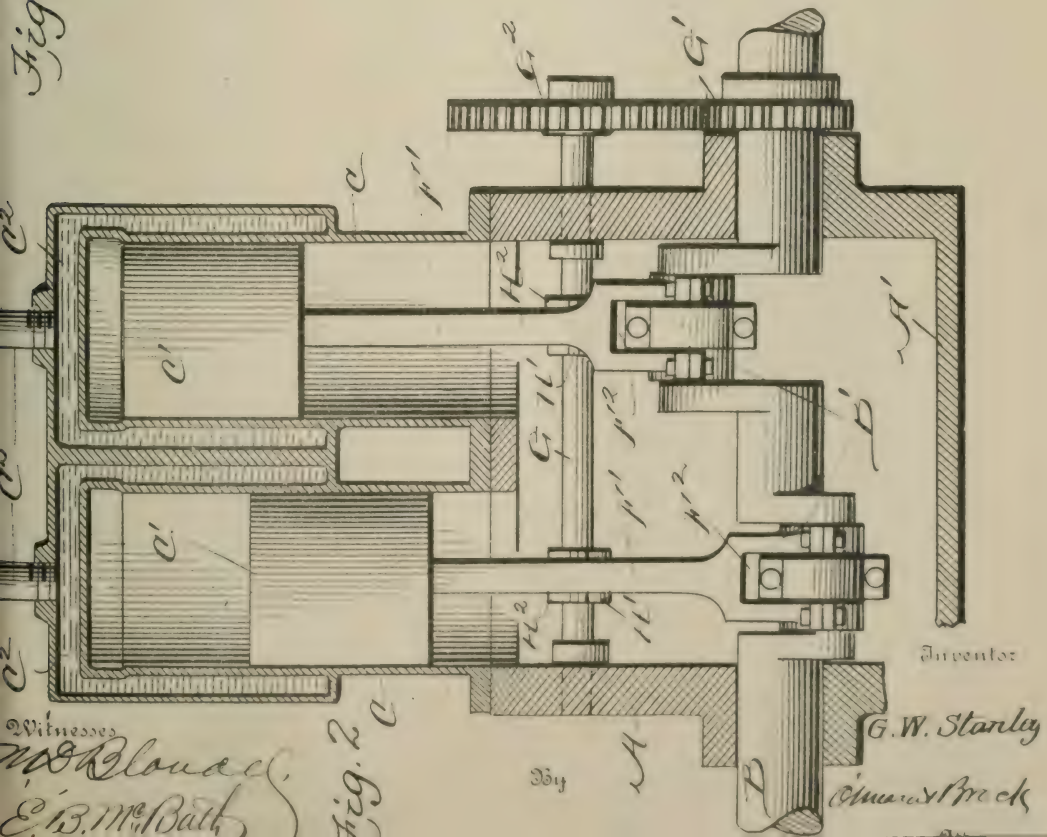


Fig. 3.



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Charles H. Brock

Witnesses
W. B. Clouet
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Fig. 2.

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GASOLINE ENGINE.

APPLICATION FILED AUG. 20, 1906

3 SHEETS-SHEET 3.

Fig. 5.

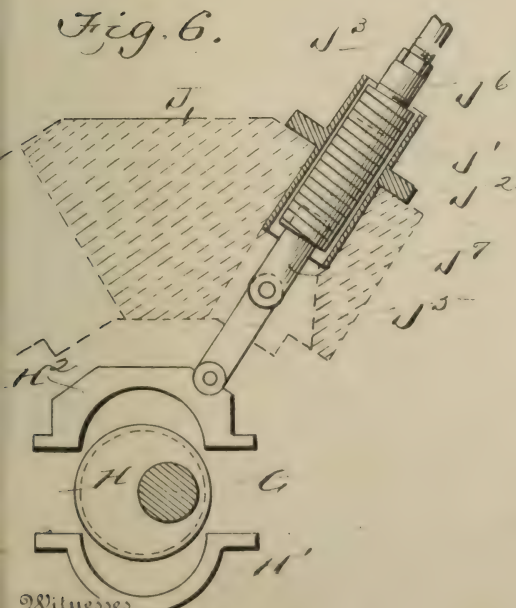
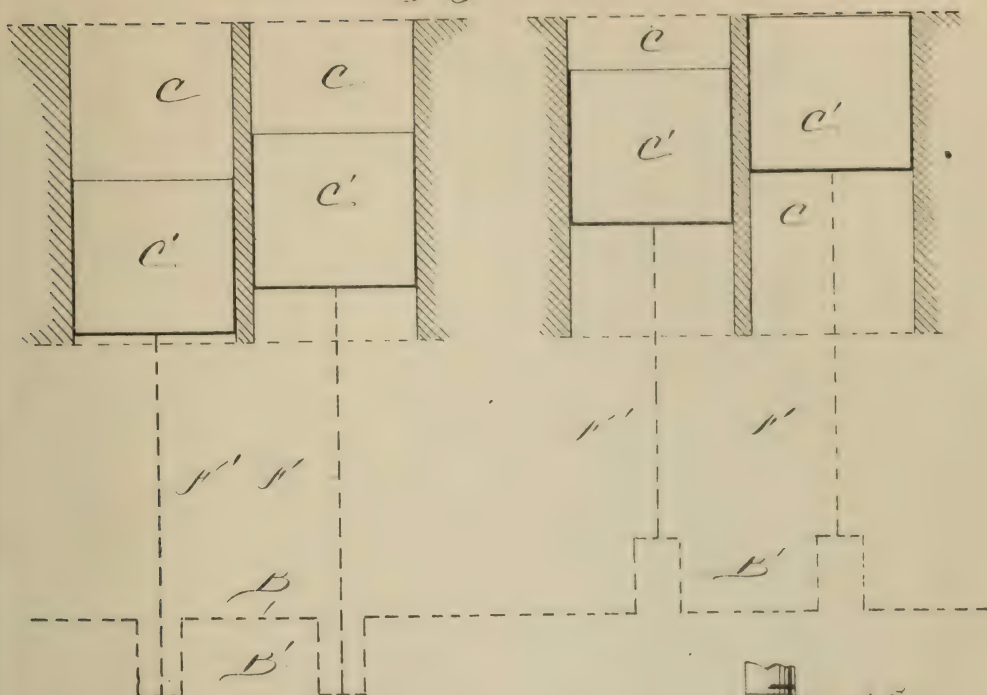
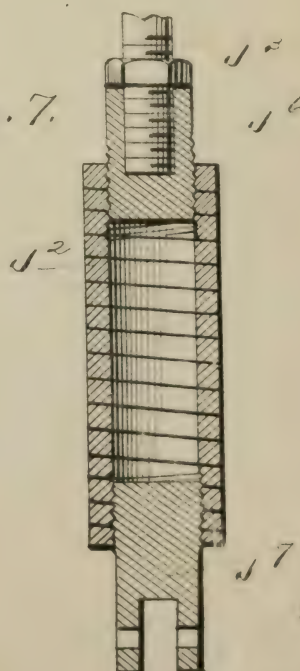


Fig. 7.



Inventor

G. W. Stanley.

By *Amos & Brock*

Attorneys

Witnesses

W. B. Blouet
E. B. McBath

UNITED STATES PATENT OFFICE.

GEORGE W. STANLEY, OF LOGANSFORT, INDIANA, ASSIGNOR OF ONE-EIGHTH TO GEORGE D. MILLER, ONE-EIGHTH TO ERNEST A. TUCKER, ONE-EIGHTH TO ARTHUR E. STANLEY, ONE-EIGHTH TO FREDERICK H. KLINSICK, AND ONE-EIGHTH TO WILLIAM D. CRAIG, OF LOGANSFORT, INDIANA.

GASOLENE-ENGINE.

No. 875,297.

Specification of Letters Patent.

Patented Dec. 31, 1907.

Application filed August 20, 1906. Serial No. 331,352.

To all whom it may concern:

Be it known that I, GEORGE W. STANLEY, a citizen of the United States, residing at Logansport, in the county of Cass and State of Indiana, have invented a new and useful Improvement in a Gasolene-Engine, of which the following is a specification.

This invention relates to gasolene engines and has for its object an engine of this type in which an increased amount of power may be obtained without a proportionate increase in size, weight, and cost of the engine, and a further object of the invention is to reduce the amount of friction to a minimum by reducing the number of bearings and to also obtain a very light and compact engine. In engines of this kind it is common to have on a four cylinder engine, nine bearings and on a six cylinder engine, thirteen bearings. I have reduced this number to five and seven respectively, and this not only reduces the amount of friction but also enables me to shorten the length of the casings and of the drive shaft and thereby obtain a very light engine for the number of cylinders used.

The invention consists of the novel features of construction, hereinafter fully described, pointed out in the claims and shown in the accompanying drawings, in which,

Figure 1 is a vertical sectional view taken longitudinally through one set of oppositely disposed cylinders, and transverse through the casing and one wrist pin. Fig. 2 is a section on the line 2—2 of Fig. 1. Fig. 3 is a section on the line 3—3 of Fig. 1. Fig. 4 is a section on the line 4—4 of Fig. 1. Fig. 5 is a diagrammatic view illustrating the relative positions of the pistons in the respective cylinders, and the relative angle of the crank portions of the driving shaft. Fig. 6 is a detail sectional view through a small portion of the casing and through a guide sleeve illustrating the construction of a valve moving mechanism parts being detached. Fig. 7 is a longitudinal section through a coil spring and attached parts, the parts being shown in elevation in Fig. 6.

In these drawings I have illustrated my invention as applied to a four cylinder engine, although it will be understood that it can be applied to any multiple of a two cylinder engine which may be desired by the addition of the extra cylinders and the parts necessary to coact with them.

In these drawings, A represents a casing which is provided with a detached or separate bottom portion A', and the casing A is provided upon opposite sides with arms A² by means of which it can be mounted or secured in place.

Upon the casing A are mounted two sets of cylinders C the cylinders of each set being arranged out of the perpendicular at an angle of about thirty-two degrees and the two sets being oppositely arranged. Each cylinder is provided with piston C' and is surrounded by a water jacket C² and is also provided with an exhaust nozzle C³ and each water jacket is provided with a drain pipe C⁴ and a supply pipe C⁵.

Passing longitudinally through the casing A is a driving or power shaft B, provided in the case of a four cylinder engine with two cranked portions, each of which has a wrist pin B'. A fluid vapor pipe D supplies each of the four cylinders by means of four branch pipes D'. These fluid vapor inlet pipes D' open into a chamber D² formed upon one side of the cylinder proper and this chamber opens into an igniting chamber D³ formed at the upper ends of the cylinders and communicating with the clearance space. A suitable igniting or firing pin D⁴ ignites the vapor passed into the chambers D². Communication between the chambers D² and D³ is controlled by a suitable check valve E which co-operates with a suitable valve seat formed between said chambers.

To the piston C' of one set of cylinders C are pivotally connected pitmen rods F, and to the pistons C' of the other set of cylinders are pivotally connected pitman rods F', which are slotted at their lower ends as shown at F² and a pitman F is pivotally connected to each of the wrist pins B' within the bifurcation F² of one of the rods F', so that to each wrist pin B' are pivoted two pitmen of one of the sets of cylinders C.

It will be obvious therefore that as the cylinders C are arranged in oppositely disposed sets the same holds true of the pistons. To distinguish more clearly between these sets the piston rods of one set are designated by the reference letter F and of the other set by the reference letter F', the construction being the same. The wrist pins B' are also disposed at angles of ninety degrees apart and the various pistons will therefore occupy at

any given time different positions in their various cylinders.

As shown in Fig. 5 as one of the pistons is upon the point of commencing a stroke upwardly, in a cylinder of one set, a piston of an oppositely arranged cylinder, that is, in the other set, has made one fourth of the stroke, the adjacent piston C' has made one-half of a stroke and the piston C' in the remaining cylinder of the last mentioned set, has completed a stroke, and it will be also observed from said diagram that as a piston to which is connected a pitman rod F is ending its stroke, a second piston to which is connected a piston rod F and which therefore belongs to the same set of cylinders, has only made one-fourth of a stroke, while a piston C' to which a rod F' is connected is commencing a stroke and a remaining piston also connected to a rod F' has completed one-half of its stroke.

To regulate the admission of vapor from the pipes D' into the igniting chambers D², the following mechanism is employed:—A shaft G is arranged above and parallel to the shaft B and there is mounted upon this shaft a gear wheel G² which meshes with a gear wheel G' carried by the shaft B, the gear wheel G² being twice the size of the gear wheel G' and making one revolution to two revolutions of the gear wheel G'. The shaft G carries two eccentrics H, which are provided with an eccentric strap H' and a block H², the block H² forming the upper half of the strap. A suitable casting J is formed upon the casing A between the two sets of cylinders and in this casting which is suitably cut out are arranged a plurality of guide sleeves J' one for each valve E and within the sleeves J' are loosely placed close coil springs J² which are connected at their upper ends to the valve stems J³ and at their lower ends to links J⁵ which are pivotally connected to ends of the blocks H². In Figs. 6 and 7 I have shown the details of construction of these parts and it will be noted that the spring J² has a plug J⁶ threaded into its upper end and into this plug is threaded the lower end of the valve stem J³, a suitable nut being used to lock the same in place. A bifurcated plug J⁷ is threaded into the lower end of the spring J² and in the bifurcation of the plug J⁷ is pivoted the upper end of one of the links J⁵. It will be understood that two of the links J⁵ are connected to each of the blocks H² and to opposite ends of the said block, and that they actuate valves E

in opposing cylinders. As the eccentric H rotates it will lift the ends of the block H² alternately, and it will also be noted that the sleeves J' are arranged parallel to the cylinders and therefor at an angle to the block H² which is arranged in a horizontal plane and transverse to the shaft G. By reason of this construction the eccentric H will give an upward thrust to the valve E of one of the cylinders and then an upward thrust to the valve E of the opposing cylinder, and as the valve actuating mechanism includes a spring, the valve will be positively opened, by the thrust of the eccentric and positively closed by the block H² aided by the spring, as the tendency of the springs J² are to force the block H² down upon the periphery of the eccentric H.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. The combination with an engine having cylinders arranged in oppositely disposed sets, pistons in said cylinders, a power shaft, piston rods connected to said power shaft, a parallel shaft driven from the power shaft, valve chambers carried by the cylinders, valves in said chambers, eccentrics on the second mentioned shaft, blocks on the eccentrics, straps holding the blocks in place, and means for pivotally connecting two valves of oppositely disposed cylinders to the same block.

2. In a multi-cylinder engine, cylinders arranged in oppositely disposed sets, pistons, piston rods, a common crank shaft, a second shaft, driven from the crank shaft, eccentrics thereon, blocks on the eccentrics, valve casings carried by the cylinders, valves therein, valve stems, springs connected to the valve stems, and links pivotally connecting the springs to the blocks, valves of opposite sets being connected to the same.

3. A valve mechanism for multi-cylinder engines comprising an eccentric, a block fitting thereon, a strap connected to the corners of the block, valves, said valves being carried by the oppositely disposed cylinders, valve stems, closed coiled springs connected to the outer end of the stems and links each pivotally connected at one end to a spring and at the opposite end to one of the remaining corners of the blocks.

GEORGE W. STANLEY.

Witnesses:

W. B. SCHRIER,

THOMAS J. McELHENY.

J. F. LINDBERG & J. FITZGERALD.

OSCILLATING ENGINE.

APPLICATION FILED FEB. 26, 1908.

905,721.

Patented Dec. 1, 1908.

Fig. 2.

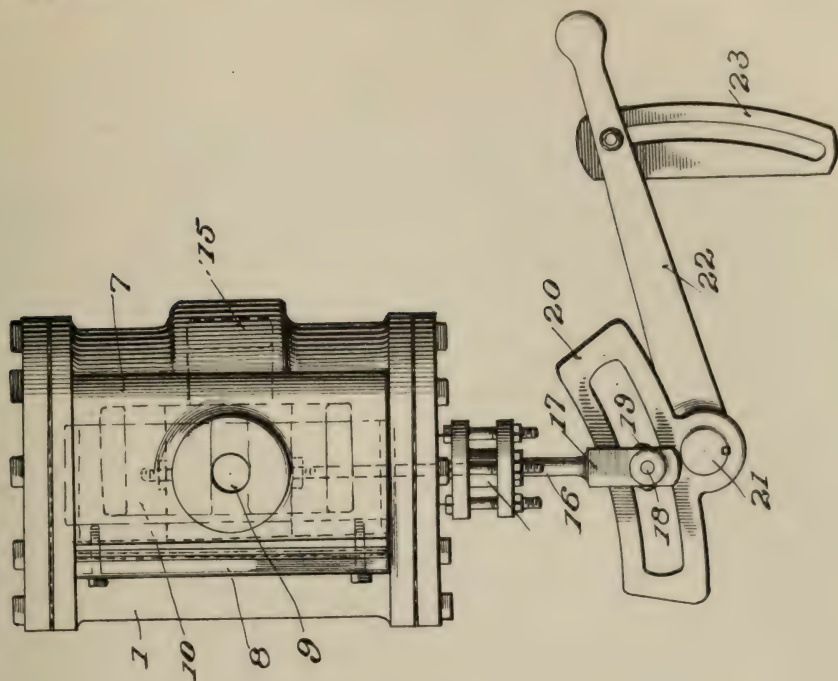
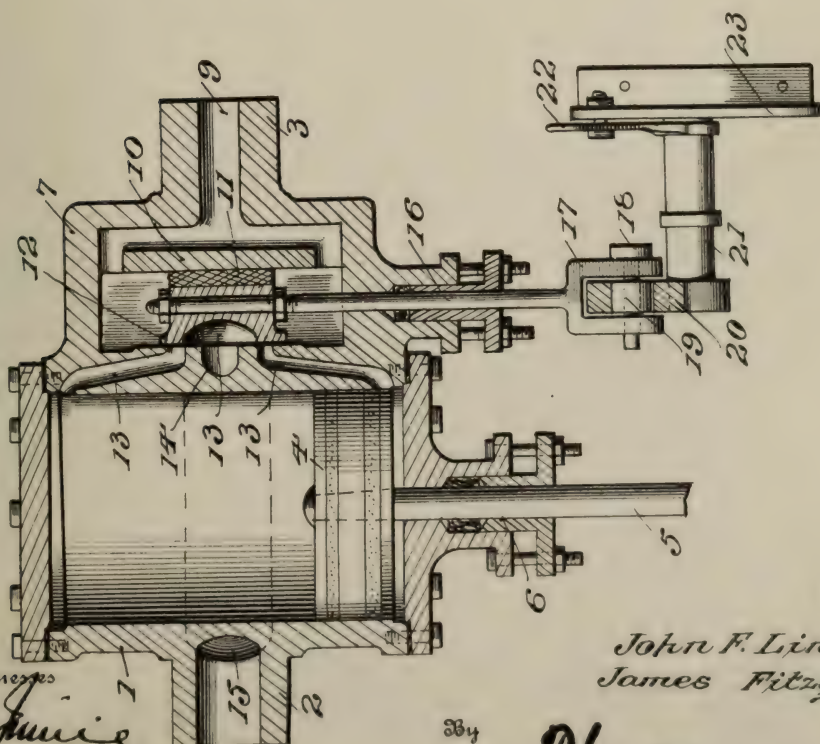


Fig. 1.



Inventors

John F. Lindberg
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H. A. R. R. R.

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Witnesses
J. M. W. Woodson

any given time different positions in their various cylinders.

As shown in Fig. 5 as one of the pistons is upon the point of commencing a stroke upwardly, in a cylinder of one set, a piston of an oppositely arranged cylinder, that is, in the other set, has made one fourth of the stroke, the adjacent piston C' has made one-half of a stroke and the piston C' in the remaining cylinder of the last mentioned set, has completed a stroke, and it will be also observed from said diagram that as a piston to which is connected a pitman rod F is ending its stroke, a second piston to which is connected a piston rod F and which therefore belongs to the same set of cylinders, has only made one-fourth of a stroke, while a piston C' to which a rod F' is connected is commencing a stroke and a remaining piston also connected to a rod F' has completed one-half of its stroke.

To regulate the admission of vapor from the pipes D' into the igniting chambers D², the following mechanism is employed:—A shaft G is arranged above and parallel to the shaft B and there is mounted upon this shaft a gear wheel G² which meshes with a gear wheel G' carried by the shaft B, the gear wheel G² being twice the size of the gear wheel G' and making one revolution to two revolutions of the gear wheel G'. The shaft G carries two eccentrics H, which are provided with an eccentric strap H' and a block H², the block H² forming the upper half of the strap. A suitable casting J is formed upon the casing A between the two sets of cylinders and in this casting which is suitably cut out are arranged a plurality of guide sleeves J' one for each valve E and within the sleeves J' are loosely placed close coil springs J² which are connected at their upper ends to the valve stems J³ and at their lower ends to links J⁵ which are pivotally connected to ends of the blocks H². In Figs. 6 and 7 I have shown the details of construction of these parts and it will be noted that the spring J² has a plug J⁶ threaded into its upper end and into this plug is threaded the lower end of the valve stem J³, a suitable nut being used to lock the same in place. A bifurcated plug J⁷ is threaded into the lower end of the spring J² and in the bifurcation of the plug J⁷ is pivoted the upper end of one of the links J⁵. It will be understood that two of the links J⁵ are connected to each of the blocks H² and to opposite ends of the said block, and that they actuate valves E

in opposing cylinders. As the eccentric H rotates it will lift the ends of the block H² alternately, and it will also be noted that the sleeves J' are arranged parallel to the cylinders and therefor at an angle to the block H² which is arranged in a horizontal plane and transverse to the shaft G. By reason of this construction the eccentric H will give an upward thrust to the valve E of one of the cylinders and then an upward thrust to the valve E of the opposing cylinder, and as the valve actuating mechanism includes a spring, the valve will be positively opened, by the thrust of the eccentric and positively closed by the block H² aided by the spring, as the tendency of the springs J² are to force the block H² down upon the periphery of the eccentric H.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. The combination with an engine having cylinders arranged in oppositely disposed sets, pistons in said cylinders, a power shaft, piston rods connected to said power shaft, a parallel shaft driven from the power shaft, valve chambers carried by the cylinders, valves in said chambers, eccentrics on the second mentioned shaft, blocks on the eccentrics, straps holding the blocks in place, and means for pivotally connecting two valves of oppositely disposed cylinders to the same block.

2. In a multi-cylinder engine, cylinders arranged in oppositely disposed sets, pistons, piston rods, a common crank shaft, a second shaft, driven from the crank shaft, eccentrics thereon, blocks on the eccentrics, valve casings carried by the cylinders, valves therein, valve stems, springs connected to the valve stems, and links pivotally connecting the springs to the blocks, valves of opposite sets being connected to the same.

3. A valve mechanism for multi-cylinder engines comprising an eccentric, a block fitting thereon, a strap connected to the corners of the block, valves, said valves being carried by the oppositely disposed cylinders, valve stems, closed coiled springs connected to the outer end of the stems and links each pivotally connected at one end to a spring and at the opposite end to one of the remaining corners of the blocks.

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OSCILLATING ENGINE.

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Fig. 2.

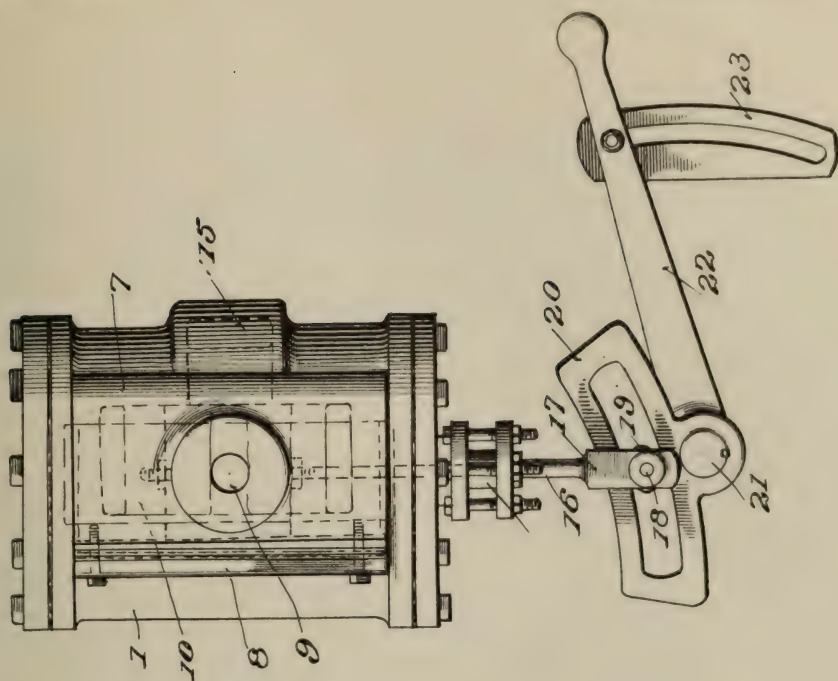
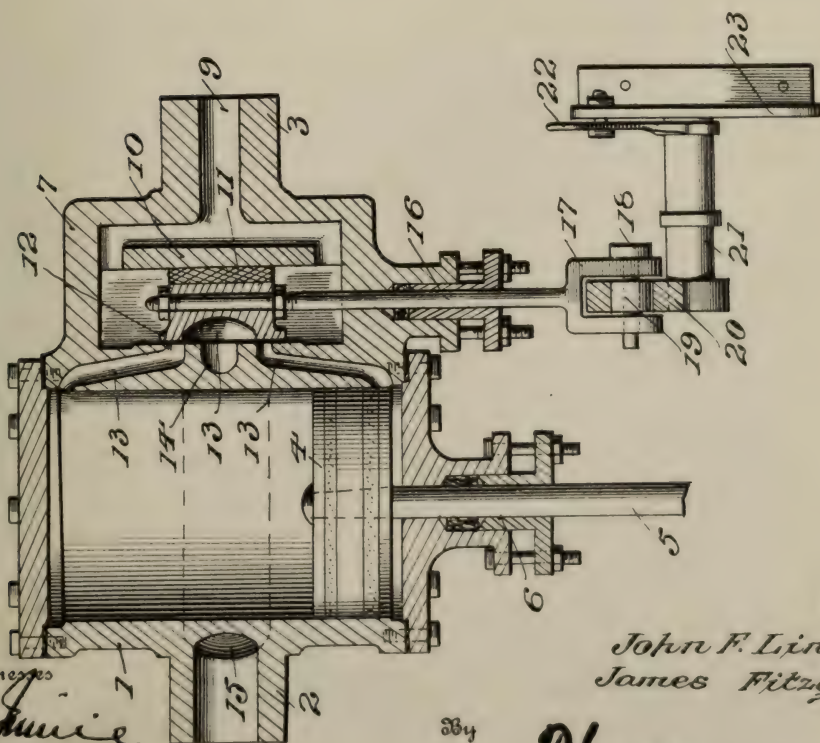


Fig. 1.



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James Fitzgerald

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W. N. Woodson

Attorneys

276 UNITED STATES PATENT OFFICE.

JOHN F. LINDBERG AND JAMES FITZGERALD, OF HIBBING, MINNESOTA.

OSCILLATING ENGINE.

No. 905,721.

Specification of Letters Patent.

Patented Dec. 1, 1908.

Application filed February 26, 1908. Serial No. 417,887.

To all whom it may concern:

Be it known that we, JOHN F. LINDBERG and JAMES FITZGERALD, citizens of the United States, residing at Hibbing, in the county of St. Louis and State of Minnesota, have invented certain new and useful Improvements in Oscillating Engines, of which the following is a specification.

This invention comprehends certain new and useful improvements in the art of steam engineering and the invention has for its primary object an improved construction of engine cylinder of the oscillating type in which is embodied a valve chest with a slide valve mounted therein, the parts being so arranged that a reciprocating motion will be imparted to the slide valve to properly admit steam to the cylinder as the same oscillates.

With these and other objects in view as will more fully appear as the description proceeds, the invention consists in certain constructions, arrangements and combinations of the parts that we will hereinafter fully describe and claim.

For a full understanding of the invention, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a sectional view of our improved oscillating engine cylinder and steam chest; and, Fig. 2 is a side elevation thereof at right angles to Fig. 1.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

Referring to the drawings, the numeral 1 designates an oscillating steam engine cylinder, and 2 and 3 the trunnions on which said cylinder is mounted to oscillate.

4 designates the piston, and 5 the piston rod which extends out through the stuffing box 6 in one head of the cylinder.

The valve chest 7 of our invention is incorporated with the cylinder 1 and provided with a side-opening cover 8 so that the slide valve and its concomitant parts may be inserted or removed. The valve chest 7 is interposed between the body of the cylinder and the trunnion 3, as clearly illustrated in the drawing, and said trunnion is hollow as

shown to provide the steam inlet port 9 which diverges and opens into the valve chest 7 at the ends of the wall 10. This wall serves as a bearing for the wear plate 11 and as a balance plate for the slide valve 12. Steam from the chamber formed in the valve chest 7 passes into the cylinder 1 through the oppositely extending inlet passages 13, and the steam exhausts through the port 14 and its connecting port 15 which opens into the hollow trunnion 2.

The valve rod 16 is secured at one end to the slide valve 12 and passes out through a stuffing box in the valve chest 7, the outer end of the valve rod being forked in the present instance as indicated at 17. A pin 18 extends through the members of the fork and secures a roller 19 therein, said roller being accommodated in a slot in a quadrant 20, the fork 17 straddling said quadrant. The quadrant 20 is mounted upon a shaft or axis 21 which is supported by any suitable means, not shown, and a handle lever 22 is connected to said shaft and is arranged for adjustable connection with a latch plate 23, as by a clamp or set screw.

From the foregoing description in connection with the accompanying drawings, it will be evident that as the cylinder oscillates on its trunnions 2 and 3, the slide valve 12 will have imparted to it a reciprocating motion, through the instrumentality of the valve rod 16 and its cam-like engagement with the quadrant 20. By having the quadrant 20 adjustable on the axis 21, the handle 22 may be moved so as to swing the quadrant and incline it in an opposite direction from that shown in the drawing whereby to reverse the engine.

Having thus described the invention, what is claimed as new is:

The combination with an oscillating engine cylinder and a steam chest secured thereto and provided at one end with a stuffing box, of a balanced slide valve mounted in said chest, a rigid valve rod connected rigidly to said valve at one end and passing outwardly through the stuffing box in which it has longitudinal movement, the valve rod being formed at its outer end with a fork, a quadrant provided with a slot and straddled by said fork, a roller journaled in said fork

and received in the slot of said quadrant, a shaft upon which said quadrant is mounted, the shaft being arranged to turn about its longitudinal axis whereby to change the position of the quadrant, a handle rigidly connected at one end to said shaft, and a slotted latch plate with which the other end of said handle is connected.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN F. LINDBERG. [L. S.]
JAMES FITZGERALD. [L. S.]

Witnesses:

A. P. SILLIMAN,
T. S. SILLIMAN.

W. H. KRATSCH.
SKID LIFTING DEVICE.

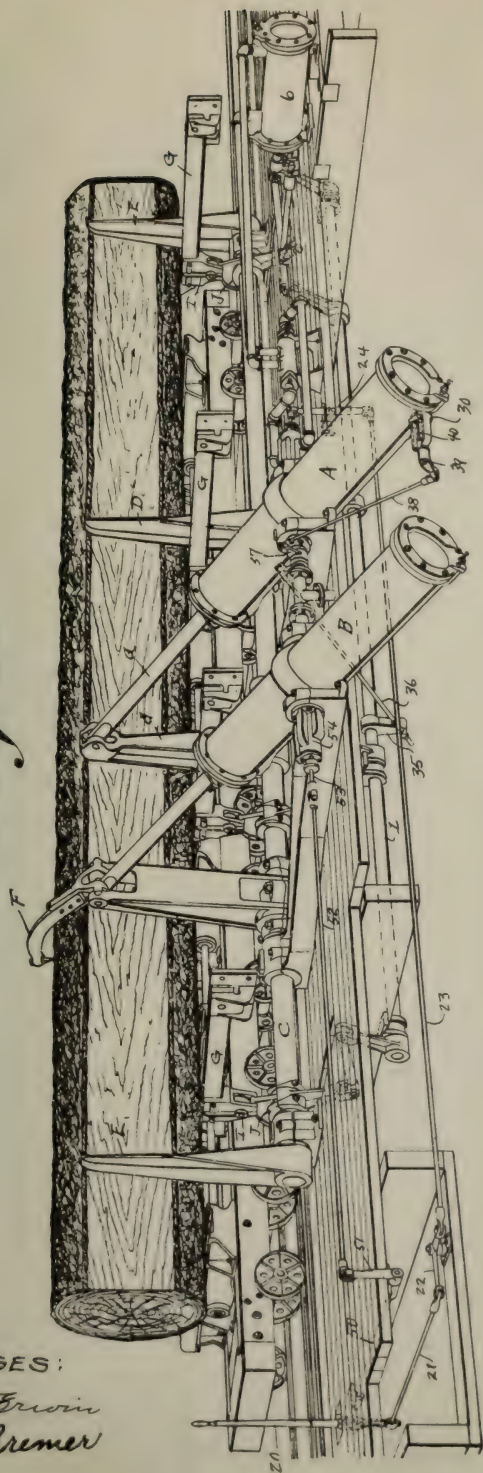
APPLICATION FILED MAR. 13, 1909.

Patented May 16, 1911.

4 SHEETS—SHEET 1.

92,212.

Fig. 1.



WITNESSES:

O. P. Erwin
J. D. Bremer

INVENTOR

William H. Kratsch

By *Erwin & Schuler*
ATTORNEYS.

W. H. KRATSCH.
SKID LIFTING DEVICE.

APPLICATION FILED MAR. 13, 1909.

Patented May 16, 1911.

4 SHEETS-SHEET 2.

992,212.

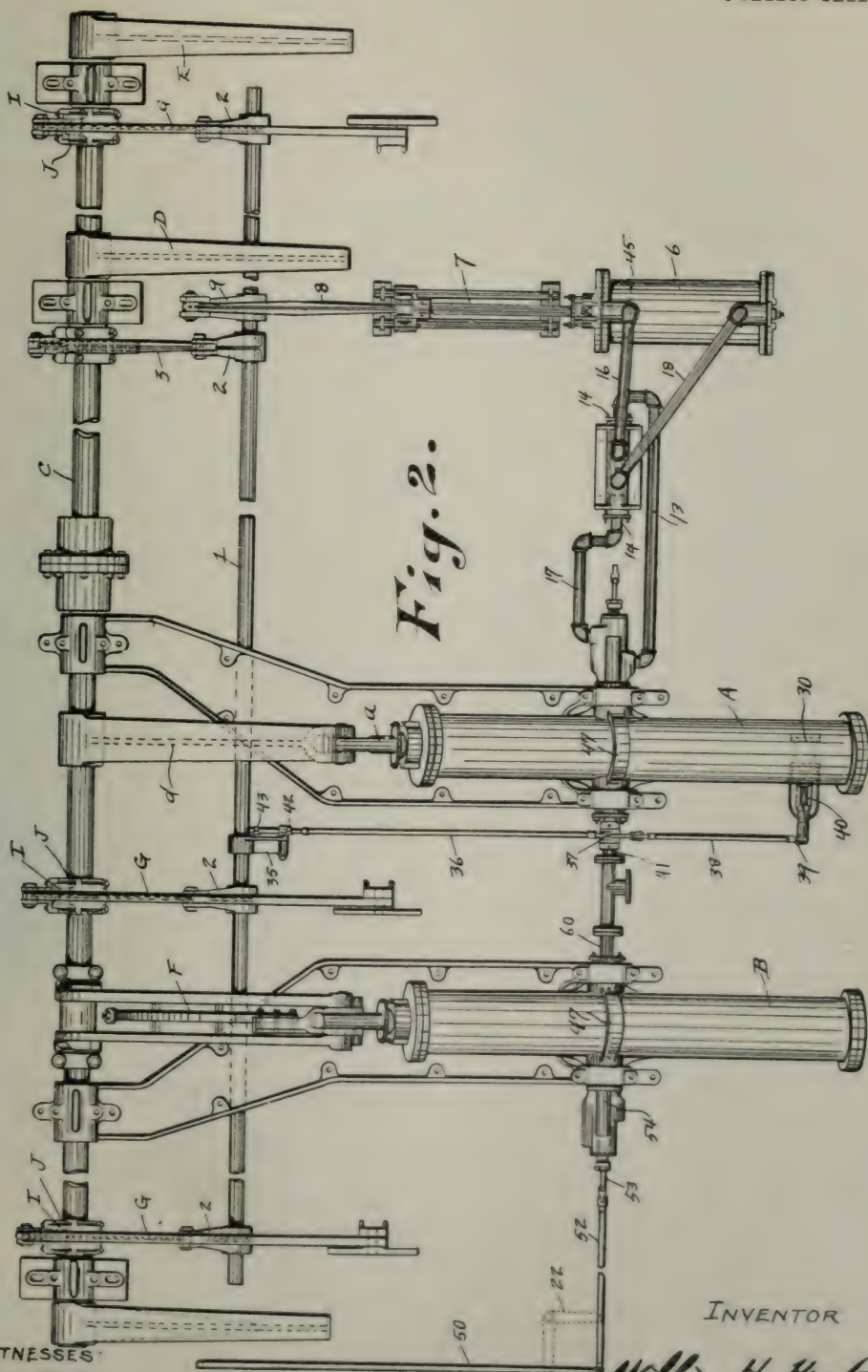


Fig. 2.

INVENTOR

WITNESSES

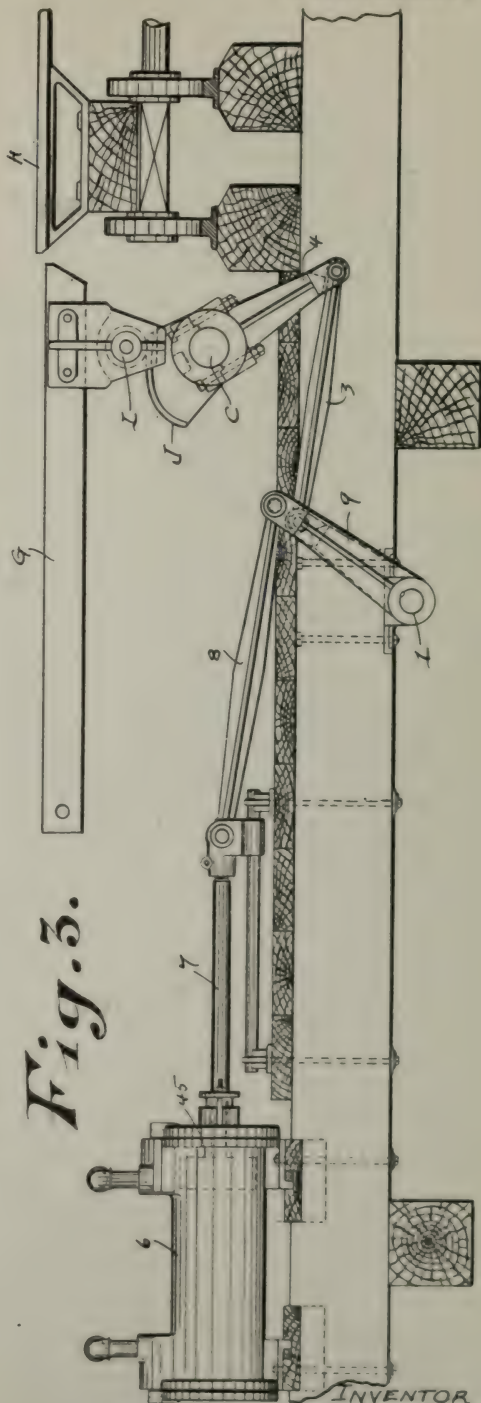
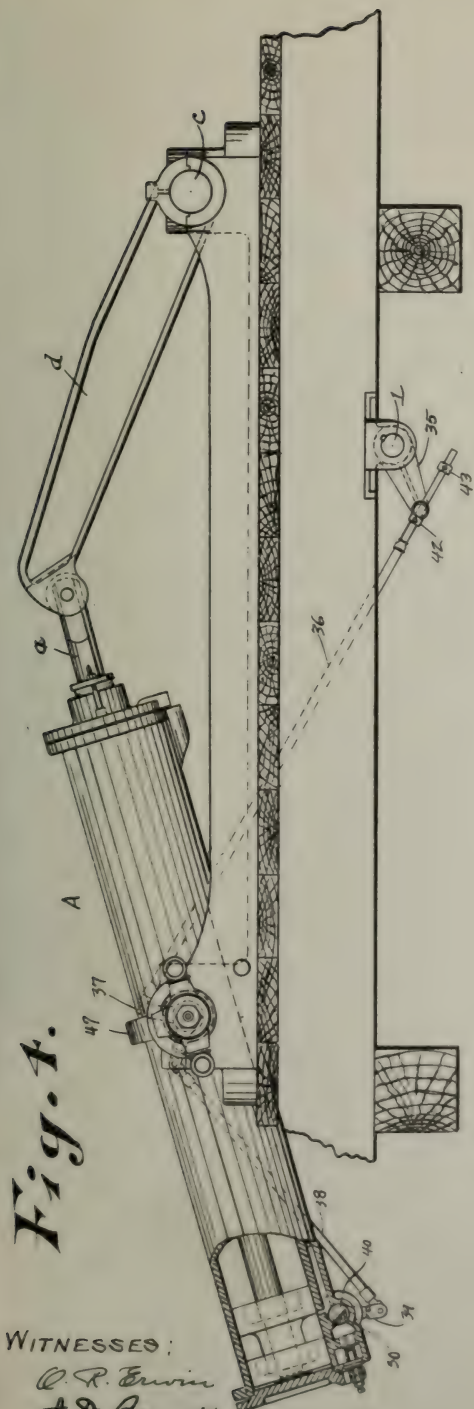
O. R. Erwin
J. D. Bremer

William H. Kratsch
By Erwin & Wheeler

992,212.

Patented May 16, 1911.

4 SHEETS—SHEET 3.



INVENTOR
William H. Kratsch
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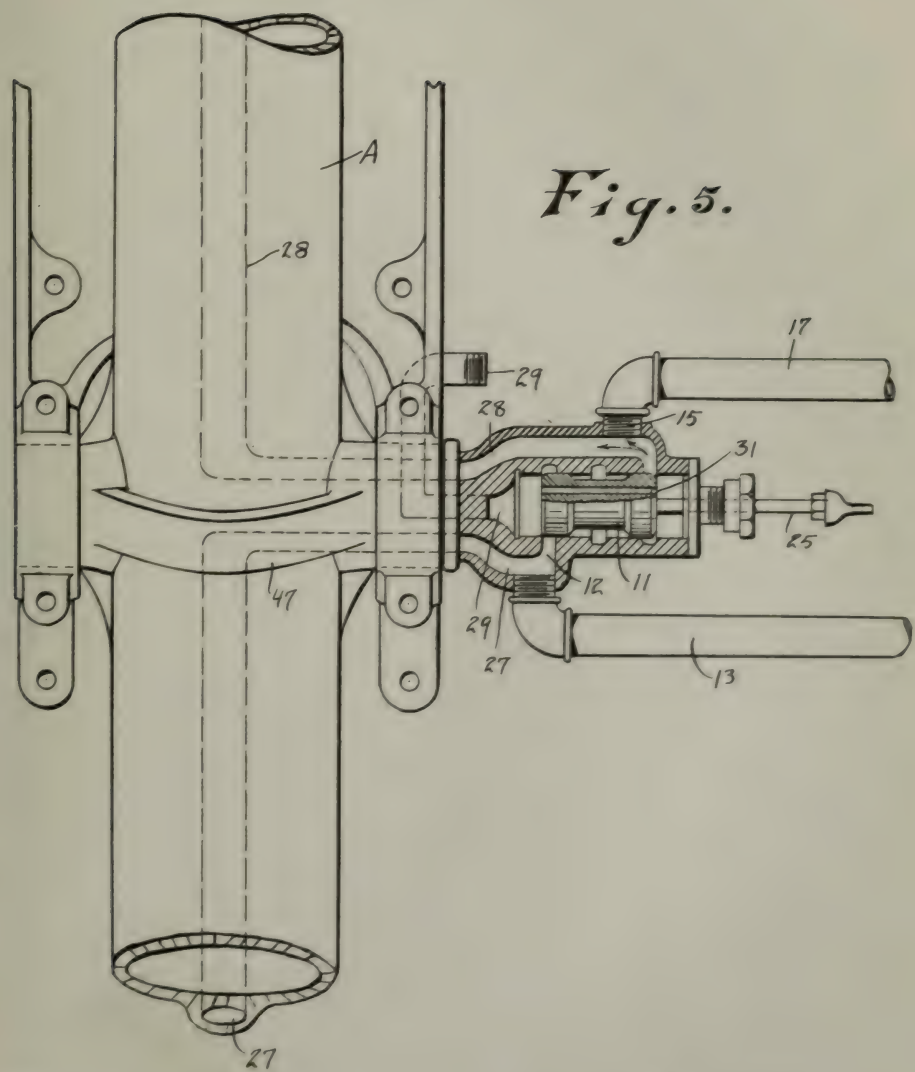


Fig. 5.

WITNESSES:

O. R. Erwin
J. D. Bremer

INVENTOR

William H. Kratsch

By Erwin & Wheeler
ATTORNEYS

UNITED STATES PATENT OFFICE.

WILLIAM H. KRATSCH, OF OSHKOSH, WISCONSIN, ASSIGNOR TO CHALLONER COMPANY,
OF OSHKOSH, WISCONSIN, A CORPORATION OF WISCONSIN.

SKID-LIFTING DEVICE.

992,212.

Specification of Letters Patent.

Patented May 16, 1911.

Application filed March 13, 1909. Serial No. 483,171.

To all whom it may concern:

Be it known that I, WILLIAM H. KRATSCH, a citizen of the United States, residing at Oshkosh, county of Winnebago, and State of Wisconsin, have invented new and useful Improvements in Skid-Lifting Devices, of which the following is a specification.

My invention relates to improvements in skid lifting devices for log loading and turning machines.

The object of my invention is to provide automatic means for lifting the skids preparatory to the loading operation, in which the operation of the log loading means will be dependent upon the operation of the skid lifting means, or the two mechanisms rendered so interdependent that they can be operated in sequence through the medium of a single controlling lever, and preferably through a single operation of such lever.

In the following description, reference is had to the accompanying drawings, in which—

Figure 1 is a perspective view of a log loading and turning machine embodying my invention. Fig. 2 is a plan view of a portion of such machine, showing the steam cylinders and the arrangement of the pipe connections for the auxiliary or skid lifting cylinder. Fig. 3 is a side view of the auxiliary or skid lifting cylinder and its skid lifting connections. Fig. 4 is a side view of the log loading cylinder, with the valve casing and a portion of the cylinder partially broken away to show the arrangement of the ports. Fig. 5 is a detail plan view of a portion of the log loading cylinder, showing the main steam controlling valve casing and ports in horizontal section.

Like parts are identified by the same reference characters throughout the several views.

My invention is illustrated as applied to a log loading machine of the type known as the Simonson log loader and turner, in which a rocking engine cylinder A is employed to oscillate a rock shaft C by means of piston rod *a* and arm *d*, thus swinging the log loading arms D and E,—another steam cylinder B being employed to operate a log turning hook F. These general features are all shown and described in U. S. patents to Simonson, numbered 408,760, and 448,593, and are therefore not herein more specifically described.

The skids G are ordinarily supported at the ends nearest the carriage H by means of blocks I and cams J, which are mounted to oscillate upon the rock shaft C. In my improved structure, these cams are free to oscillate independently of the shaft C and are actuated from a back shaft 1 through arms 2 which are fast thereon, links 3, and arms 4, the latter being connected with the respective cams. The cams, in one position, support the skids at or a little above the level of the carriage H, and in another position permit the skids to drop below such level at the ends adjacent to the carriage.

The back shaft 1 is actuated from the auxiliary cylinder 6 through its piston rod 7, connecting rod 8, and a crank arm 9 carried by the back shaft. A steam controlling valve at 11 is adapted to admit steam to the inner end of cylinder 6, through port 12, flexibly jointed pipe 13, coupling member 14, and pipe 16. When actuated in the other direction from normal position, this valve admits steam to the other end of cylinder 6 through port 15, flexibly jointed pipe 17, coupling member 14 and pipe 18. The controlling valve is actuated from a lever 20, through a rod 21, bell crank 22, rod 23, lever 24, and valve stem 25, whereby the valve may be adjusted to admit steam to either of the pipes 13 or 17, or to a central closed or normal position.

The steam cylinder A is provided with steam passages 27 and 28 along its under side, the passage 27 leading from port 12 to the outer end of cylinder A, and the passage 28 leading from port 15 to the inner end of cylinder A, viz:—the end nearest the carriage. When in normal position, as shown in Fig. 5, both ports 12 and 15 may be respectively open to an exhaust passage 29 past the end of the valve and through a central passage 31 in the valve. In the other positions one port is open to the exhaust and the other to the live steam.

Valve 30 is actuated from the piston rod 7 of the auxiliary cylinder, through the connecting rod 8, back shaft 1, crank 35, rod 36, elbow crank 37, rod 38, crank 39, and valve stem 40, the elbow crank 37 being mounted to oscillate upon a shaft 41, upon which the cylinders A and B are pivoted. The crank 35 is slidingly connected with the rod 36, with stops 42 and 43 limiting its free motion, so that rod 36 is only actuated during the

final movement of the crank in either direction. It will therefore be observed that the admission of steam to the outer end of cylinder A is dependent entirely upon the movement of piston 45 in the auxiliary cylinder. The outward movement of this piston first lifts the skids, and as this movement is completed, the valve 30 is actuated to admit steam to the outer end of cylinder A and thus actuate the log loading arms. Conversely, a retractive movement of the piston 45 in the auxiliary cylinder first lowers the skids and then closes valve 30, the steam in cylinder A having in the meantime passed backwardly to port 12 and the exhaust. It is not material whether the admission of steam to the inner end of cylinder A is similarly controlled or not, since in the retractive movement, the skids may be lowered, either before or after the operation of the arms D and E.

By adjusting the stops 42 and 43 on the rod 36, the admission of steam to cylinder A through valve 30 may be made to take place at any desired period during the stroke of piston 45. The admission of steam to cylinder B is independent of the auxiliary or skid lifting cylinder, but is preferably controlled through a movement of the same manually actuated lever, which is pivoted to a rock shaft 50 and when swung laterally, rocks this shaft and transmits motion through a crank arm 51 and rod 52 to a valve stem 53 to operate a valve at 54 controlling the admission of steam to cylinder B. Steam is supplied to the chambers of the controlling valves 11 and 54, through pipes 60 and 41 and suitable passages in the yokes 47, which support cylinders A and B.

While I have referred to the motive fluid as steam, it is not material to my invention what fluid is used. The specific connections employed are also not essential, although it is desirable to employ some form of flexible steam conducting pipes for the auxiliary cylinder, in order that this cylinder may be permitted to remain in a stationary position while the casing of the controlling valve rocks with the cylinder A. It is not material to this invention, how the several cylinders are placed nor what connections are used to transmit motion from their respective pistons to the skids. The only essential feature of the construction is that the operation of the log loading means is made dependent upon the prior operation of the skid lifting or adjusting means.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a log loader provided with skid lifting devices, the combination with fluid operated loading means, of an auxiliary fluid chamber, a movable member therein operatively connected with the skid lifting

devices, and means, operated from said movable member, for controlling the delivery of fluid to the log loading means.

2. In a log loader provided with movable skids, the combination with log loading mechanism, of fluid actuated skid lifting devices, and means, operatively connected therewith, which actuates the log loading mechanism after the initial skid lifting movement.

3. In a log loader provided with movable skids, the combination with skid lifting cams, and swinging log loading arms, of actuating mechanism for the skid lifting cams, other actuating mechanism for the log loading arms, and means, connected with the cam actuating mechanism, for controlling the operation of the log loading mechanism, whereby said skid lifting and log loading operations are performed in sequence.

4. In a log loader provided with movable skids and log loading devices, the combination of a log loading motor, and a skid lifting motor, a manually actuated lever controlling the operation of the last mentioned motor, and connections for transmitting power from said motor to control the operation of the log loading motor.

5. In a log loader provided with movable skids and log loading devices, the combination of a cylinder and piston for operating the log loading devices, another cylinder and piston for lifting the skids, a main valve controlling the admission of motive fluid to both cylinders, another valve also controlling the admission of motive fluid to the log loading cylinder, and connections for actuating said last mentioned valve from the piston of the skid lifting cylinder.

6. In a log loader provided with movable skids and log loading devices, the combination of a cylinder and piston for operating the log loading devices, another cylinder and piston for lifting the skids, a main valve controlling the admission of motive fluid to both cylinders, another valve also controlling the admission of motive fluid to the log loading cylinder, and connections for actuating said last mentioned valve from the piston of the skid lifting cylinder, together with a manually actuated lever for adjusting the first mentioned valve.

7. In a log loader provided with movable skids and log loading devices, the combination of a cylinder and piston for operating the log loading devices, another cylinder and piston for lifting the skids, a main valve controlling the admission of motive fluid to both cylinders, another valve also controlling the admission of motive fluid to the log loading cylinder, and connections for actuating said last mentioned valve from the piston of the skid lifting cylinder, together with a manually actuated lever for

adjusting the first mentioned valve, and a log turning mechanism, a cylinder and piston for operating the same, a valve controlling the admission of motive fluid to said cylinder and independent connections with said manually actuated lever for operating said valve, said connections being adapted only for the transmission of lever movements of a different character from those which actuate the valve controlling the skid lifting and log loading mechanism.

8. In a log loader, the combination with a set of movable skids, and a set of swinging log loading arms, of fluid receiving cylinders, a piston in one of said cylinders operatively connected with the log loading arms, a piston in another of said cylinders, suitable devices operatively connected therewith and adapted to lift the skids, and a single manually actuated device arranged by movement in one direction to control the admission of fluid, first to one of said cylinders and then to the other.

9. In a log loader, the combination with a set of movable skids, and a set of swinging log loading arms, of fluid receiving cylinders, a piston in one of said cylinders operatively connected with the log loading arms, a piston in another of said cylinders, suitable devices operatively connected therewith and adapted to lift the skids, a single manually actuated device and operating connections controlled thereby for the admission of fluid to the skid lifting and log loading cylinders in sequence; said manually actuated device and its connections being arranged to necessarily admit said fluid, first to the cylinder containing the skid lifting piston and then to the other of said cylinders.

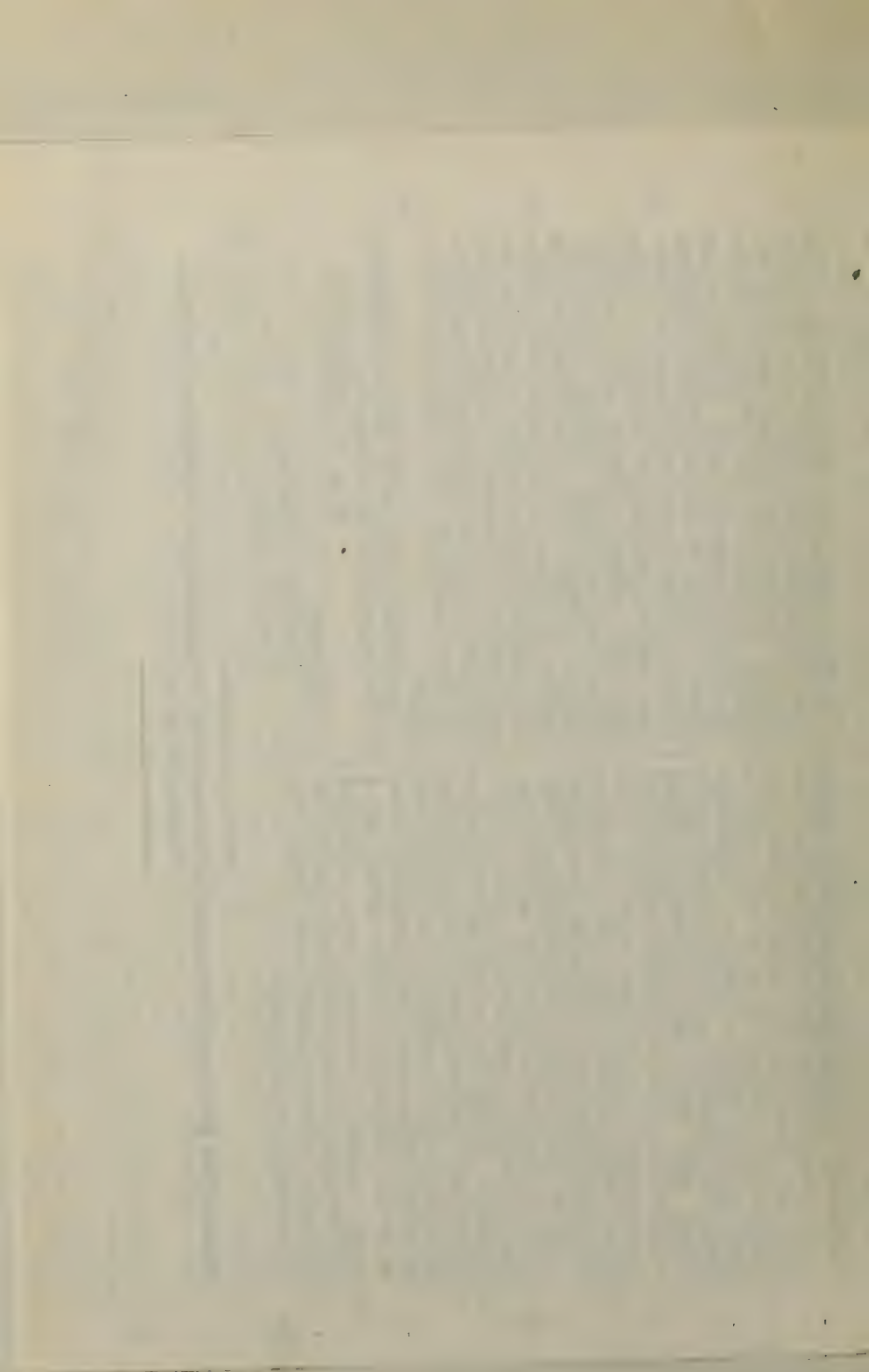
In testimony whereof I affix my signature in the presence of two witnesses.

WM. H. KRATSCH.

Witnesses:

EDWARD J. DEMPSEY,
BART W. HEISS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."



Photographic Reproduction of Model of Cleveland Log Turner
PLAINTIFF'S EXHIBIT 10



Reproduction of Page 85 of The Timberman
of March, 1912

PLAINTIFF'S EXHIBIT 16

ADVERTISING

THE TIMBERMAN



HAZARD MANUFACTURING COMPANY

WILKES-BARRE, PENNA.

NEW YORK: 100 ELY ST. PITTSBURGH: 2 CONESTOGA BUILDING CHICAGO: 104 WEST ADAMS ST.

MARSHALL-WELLS HARDWARE CO., Portland, Ore., Seattle, Wash., Spokane, Wash., Agents

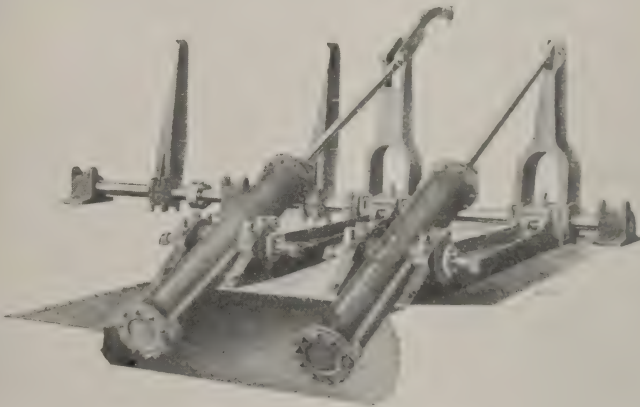
HAZARD

SPECIAL
PLOUGH
STEEL

WIRE ROPE

"OLYMPIC BRAND"

LOGGING
PURPOSES



CLEVELAND'S IMPROVED

SIMONSON LOG TURNER

WITH INDEPENDENT STEAM SKID LIFT

No leaky trunnions because valves are placed below the floor timbers. Note the straight steel bed plates and trucked truck and push arms. If you are going to get a log turner, better get the best and latest improved.

GIDDINGS & LEWIS MFG. CO.

FOND DU LAC, WISCONSIN

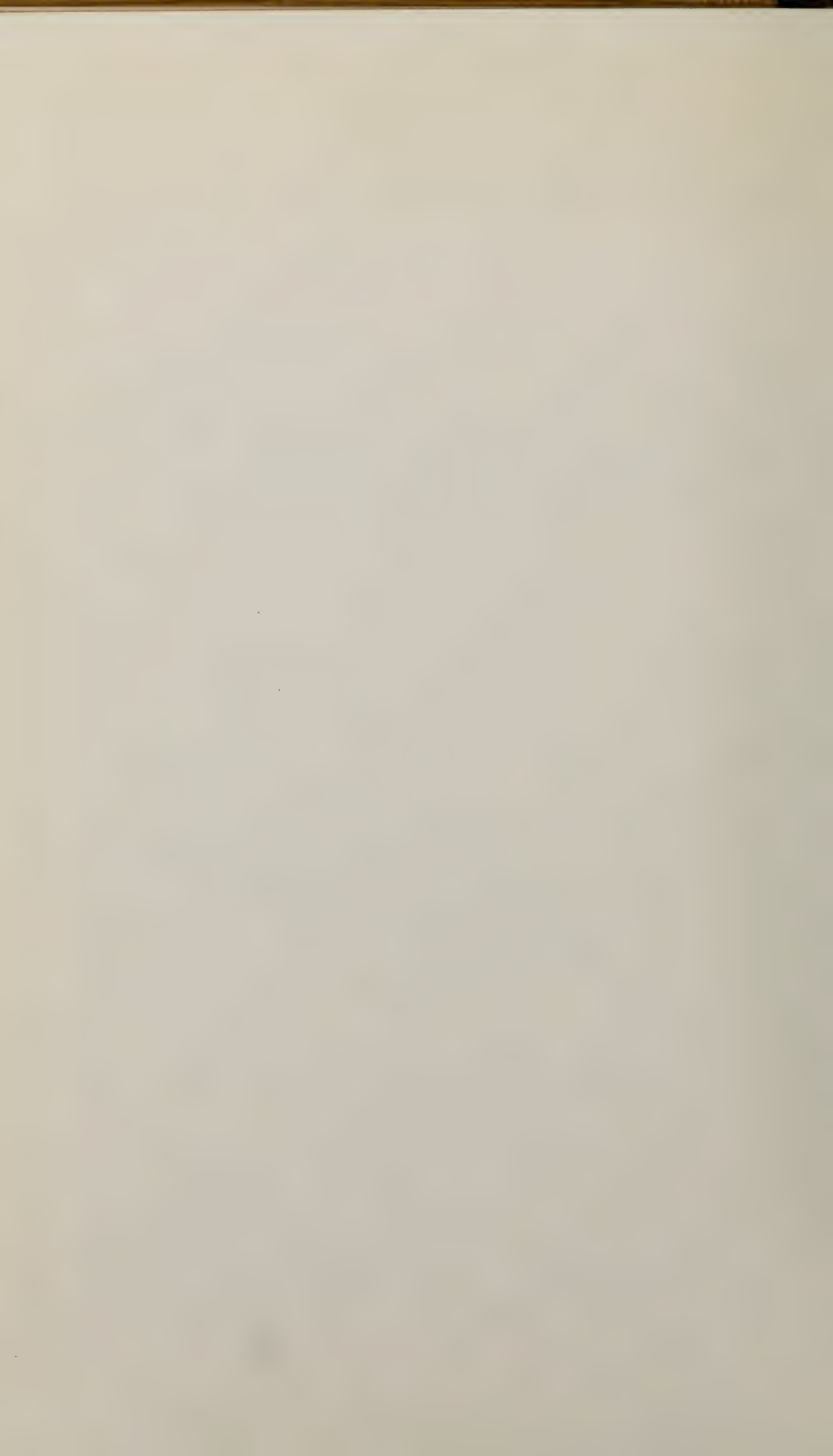


Photo Reproduction of Inside Page of Cover of The
Timberman of August, 1921

PLAINTIFF'S EXHIBIT 17



LOG TURNERS—Built with 12 or 14 cylinders
with 7 diameter shaft, length and number of arms as required.
Beds and arms of cast steel, cylinders and boxes of cast iron.

INDEPENDENT SKID-LIFT—Lately patent. With a separate
cylinder for raising each skid.
Simple to install, most effective in operation, low cost of upkeep.



Write for our Log Turner Bulletin No. 3

ORIGINATORS AND IMITATORS

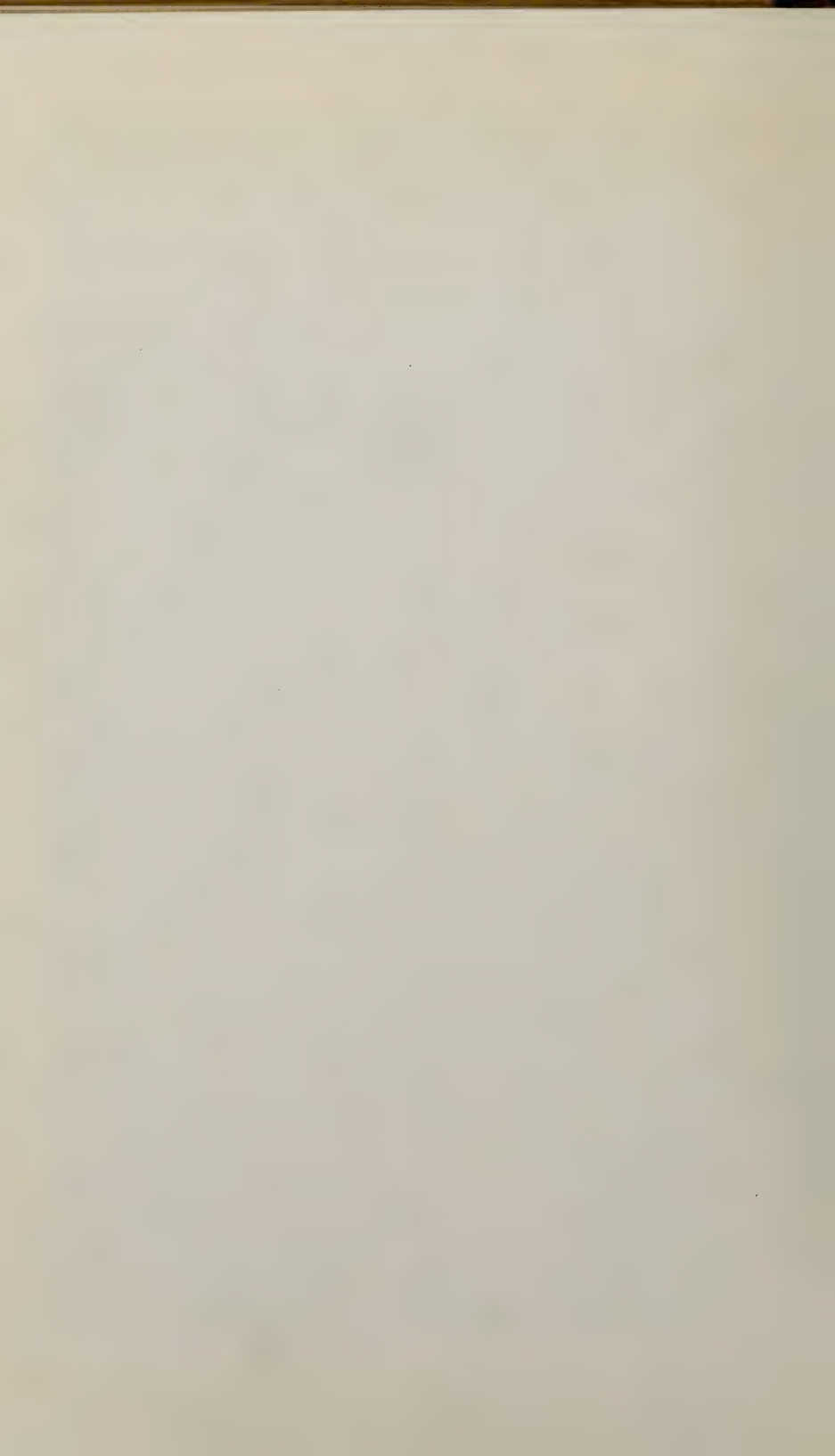
SUMNER IRON WORKS

Maint. Office and Works at EVERETT, WASHINGTON

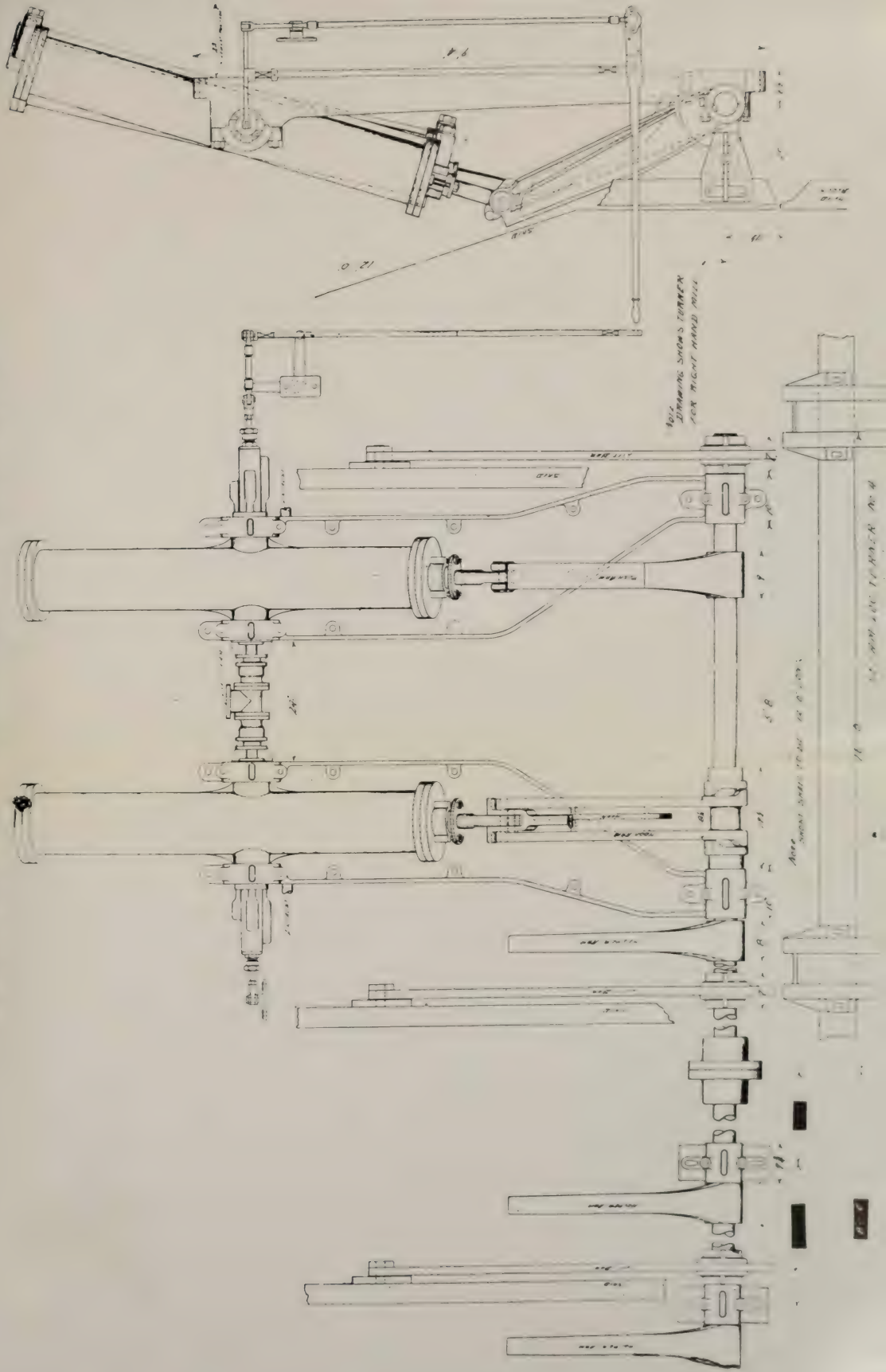
DEFENDANT'S INTERROGATORY EXHIBIT A

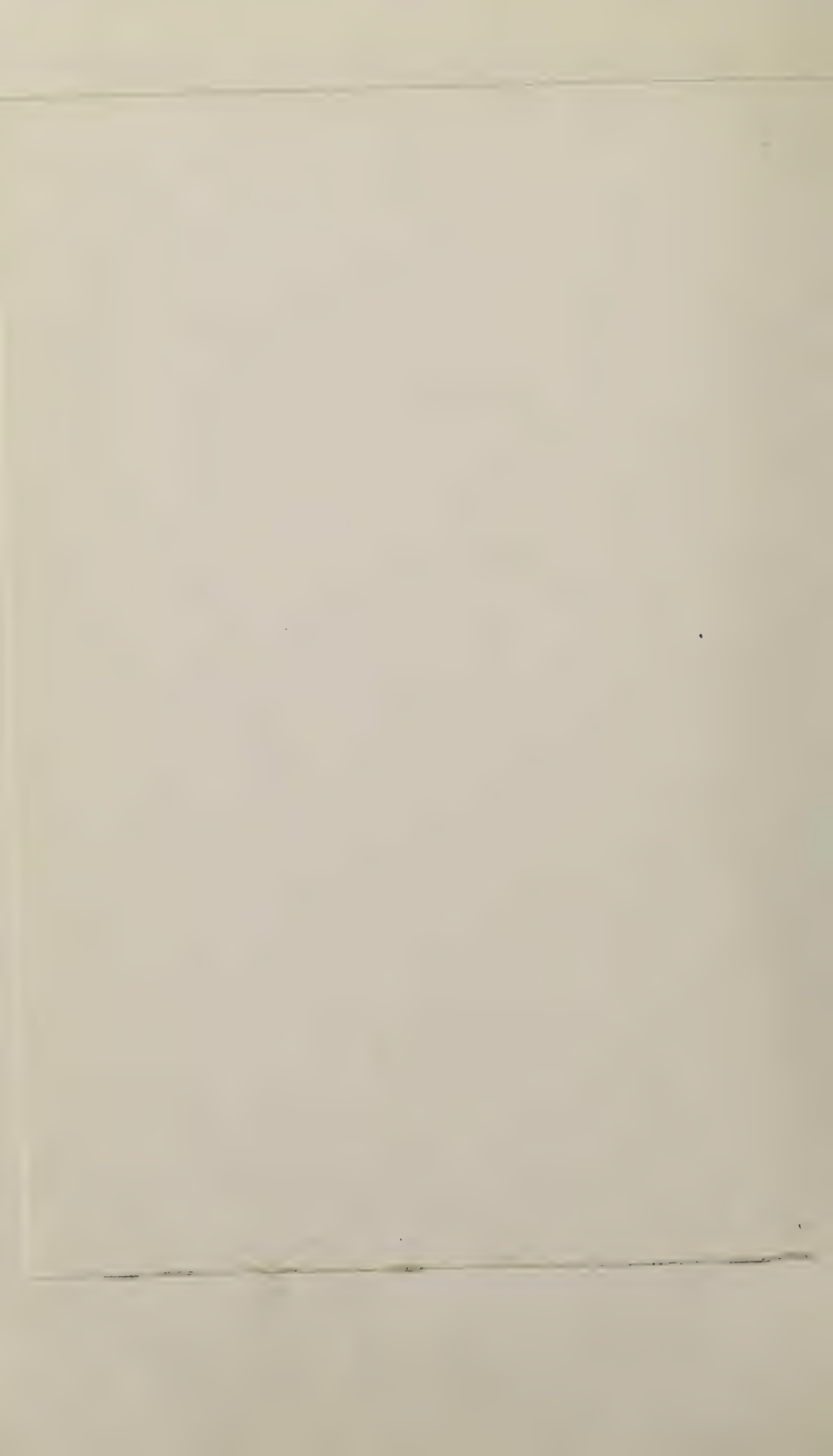
Being identical exhibit referred to in the Deposition of Chas. E. Cleveland
as Defendant's Deposition Exhibit B





DEFENDANT'S INTERROGATORY EXHIBIT B





C. E. CLEVELAND.

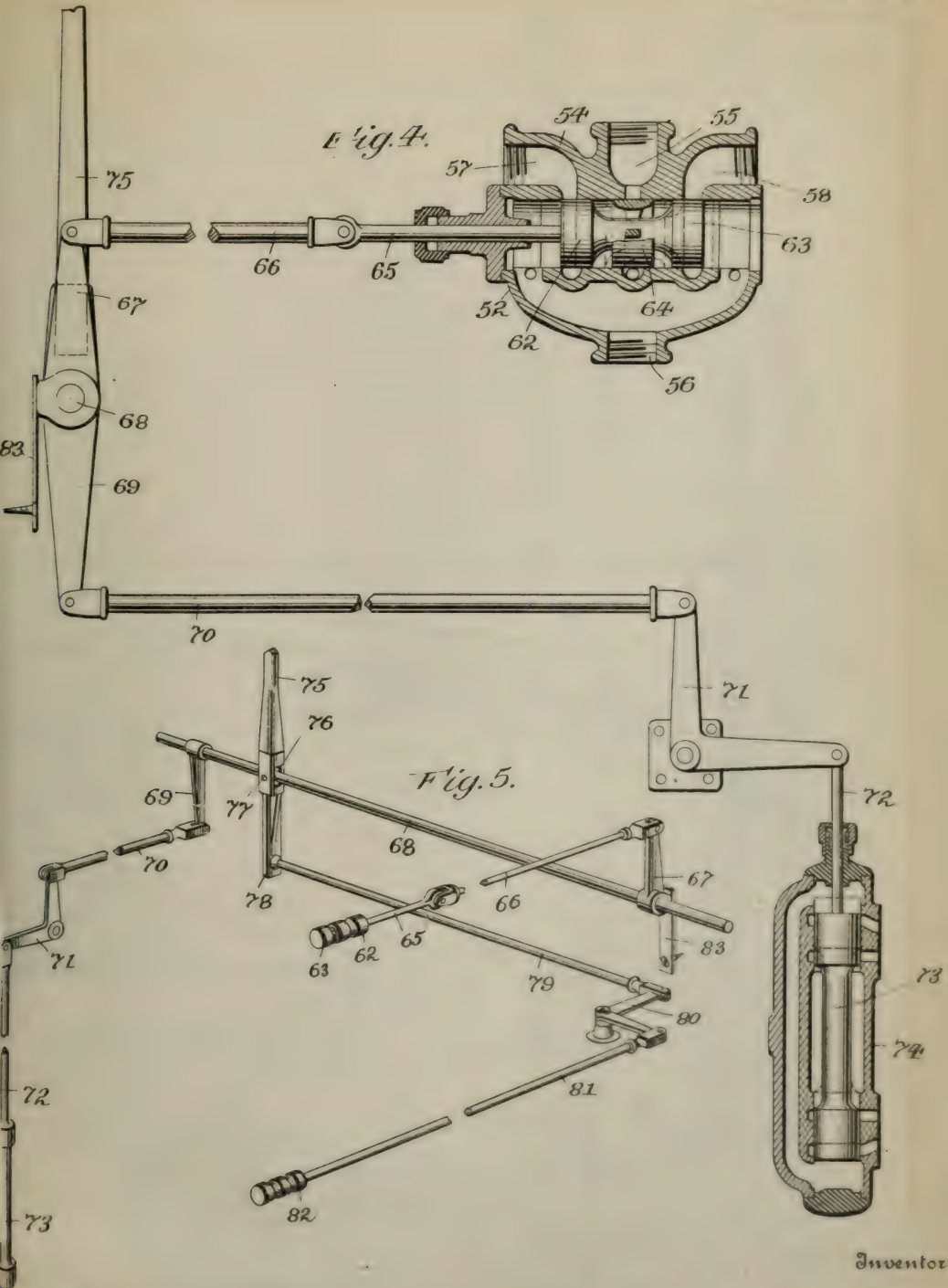
LOG HANDLING MECHANISM:

APPLICATION FILED APR. 13, 1909.

Patented Sept. 7, 1909.

4 SHEETS—SHEET 4.

933,231.



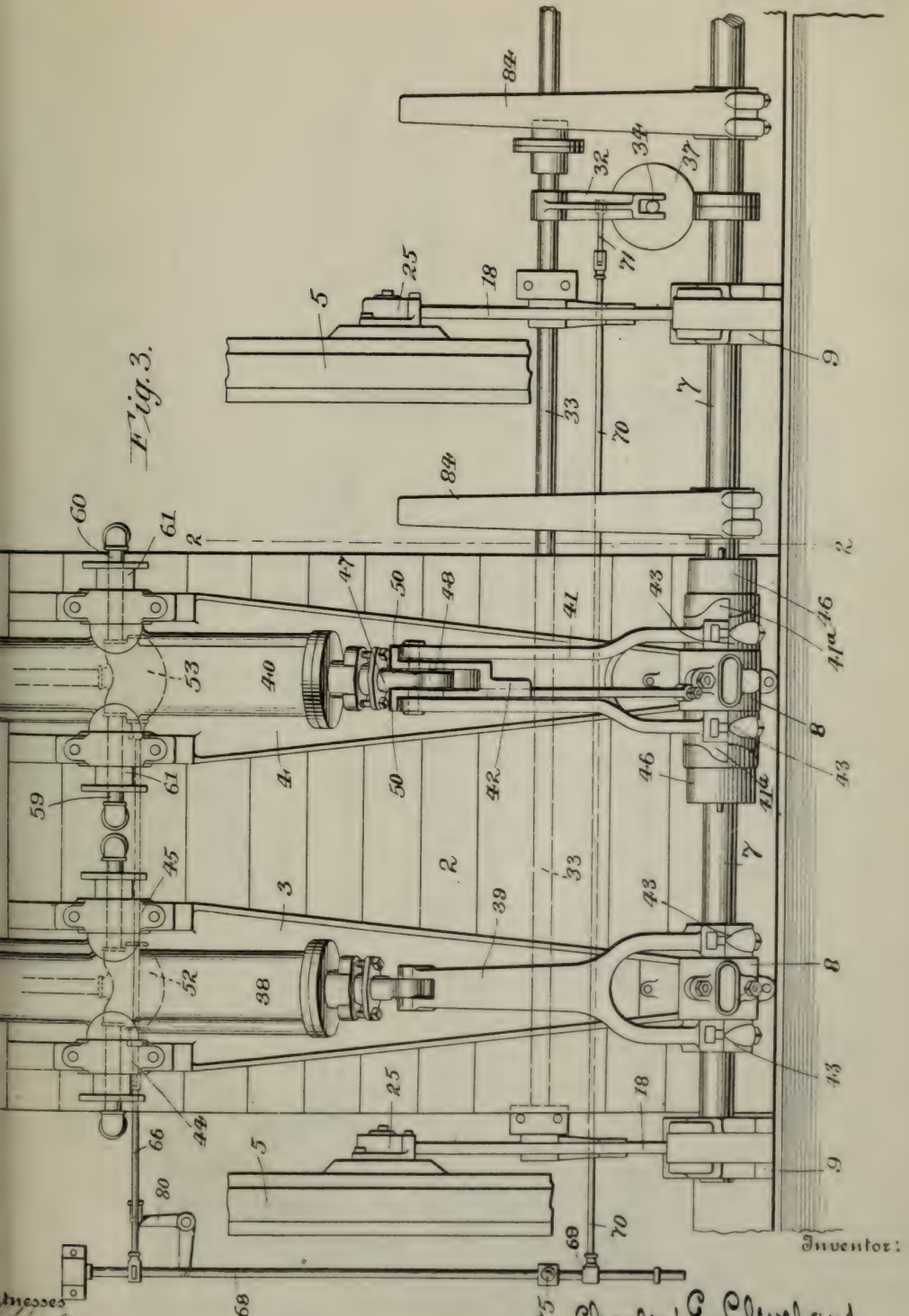
Inventor:

Witnesses
H. Kander
J. Montague

By

Charles C. Cleveland
Edge and Sons.

33,231.



Charles E. Cleveland,
Dodge and Sons

C. E. CLEVELAND.

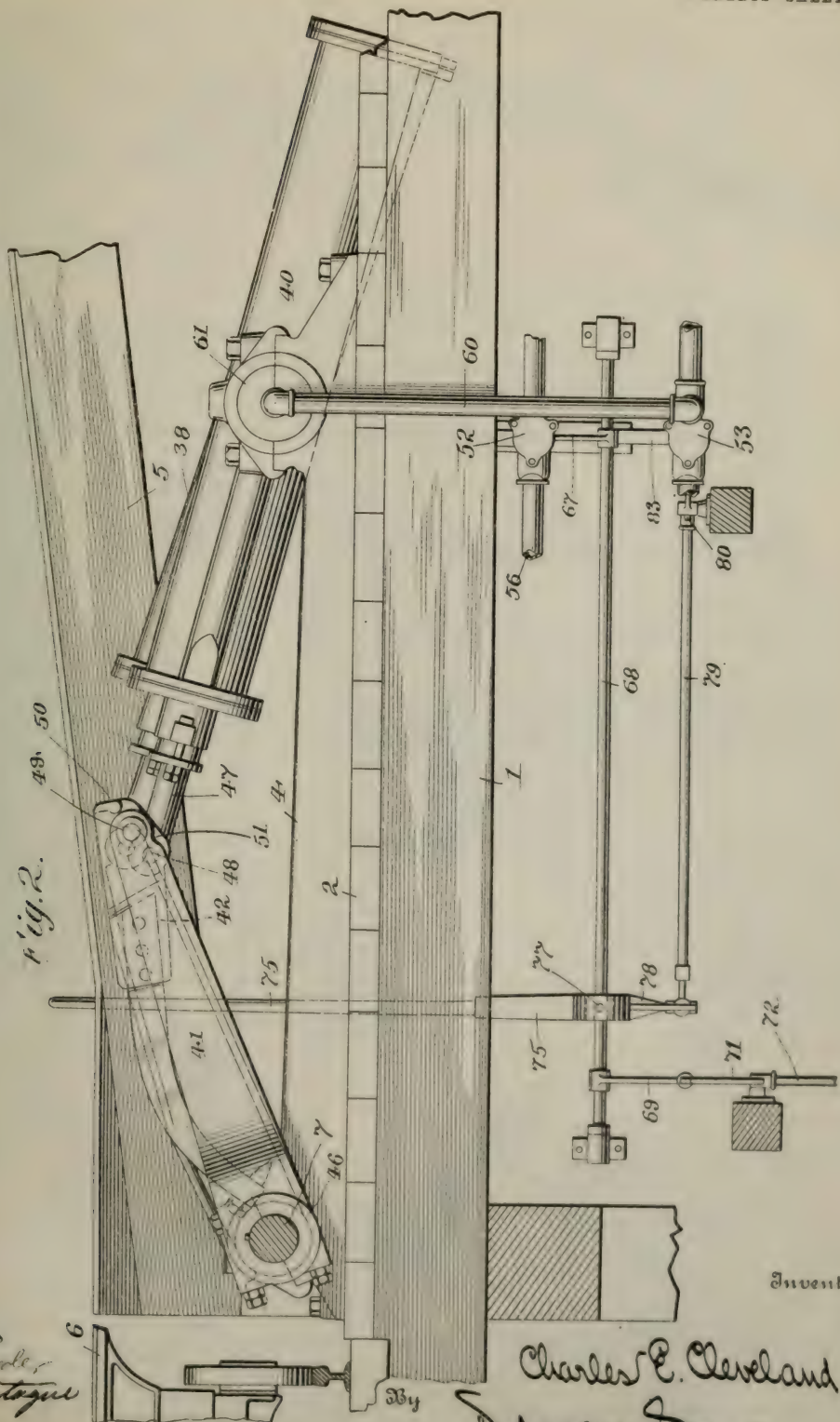
LOG HANDLING MECHANISM.

APPLICATION FILED APR. 13, 1909.

Patented Sept. 7, 1909.

4 SHEETS-SHEET 2.

33,231.



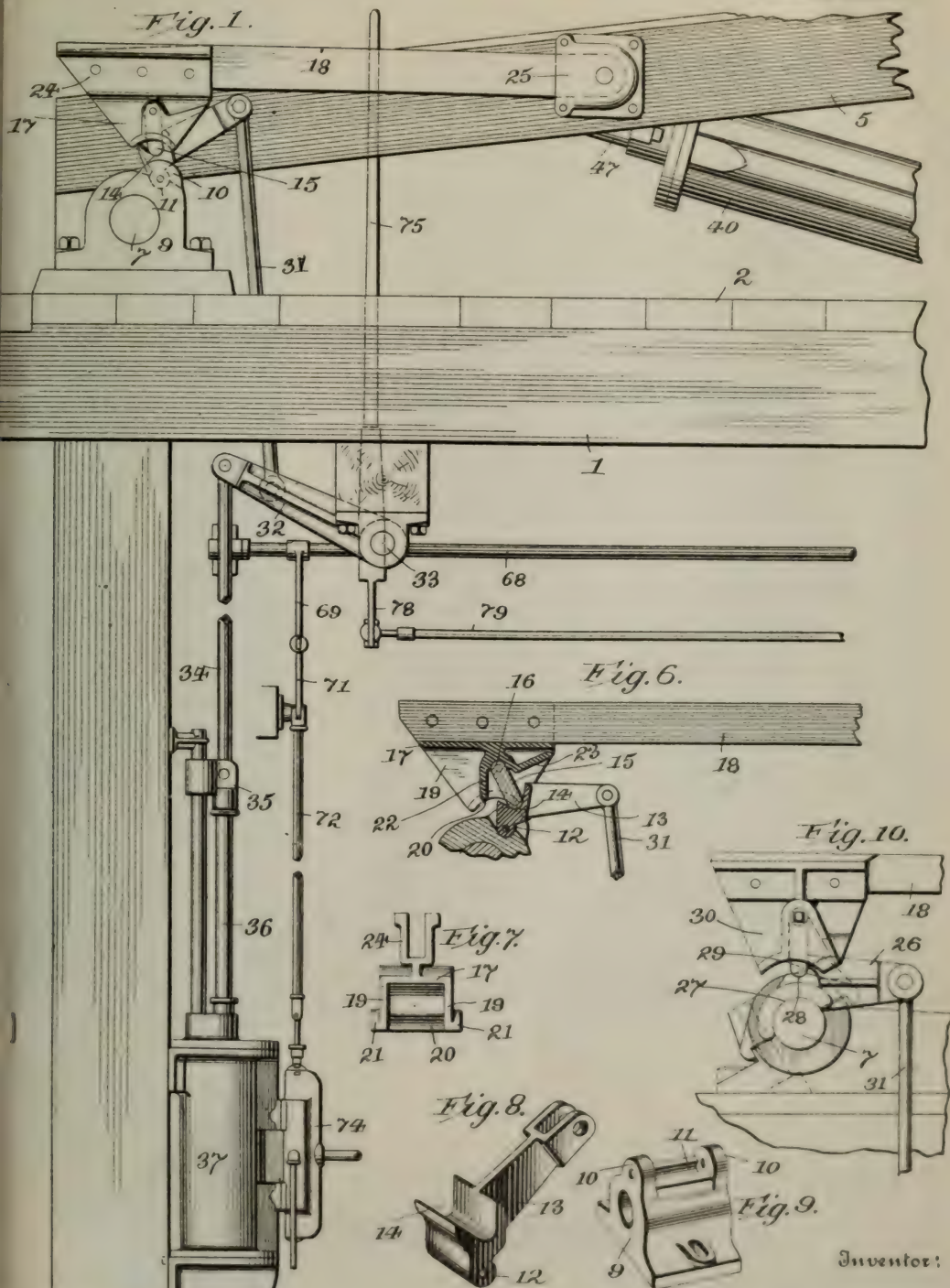
Inventor

Charles E. Cleveland.

Sodae and Sons

Witness
C. E. Cleveland
Montague

933,231.



Inventor:

Charles E. Cleveland,

Sodge and Sons,

Attorney

Witnesses
A. R. R. R.
E. Montague

Copy of Cleveland Patent in Suit
PLAINTIFF'S DEPOSITION, EXHIBIT A

UNITED STATES PATENT OFFICE.

CHARLES E. CLEVELAND, OF FOND DU LAC, WISCONSIN.

LOG-HANDLING MECHANISM.

933,231.

Specification of Letters Patent.

Patented Sept. 7, 1909.

Application filed April 13, 1909. Serial No. 489,675.

To all whom it may concern:

Be it known that I, CHARLES E. CLEVELAND, a citizen of the United States, residing at Fond du Lac, in the county of Fond du Lac and State of Wisconsin, have invented certain new and useful Improvements in Log-Handling Mechanism, of which the following is a specification.

My present invention pertains to an improved log-handling mechanism, designed more particularly to load the log onto a saw-mill carriage, to turn the same after a slab has been cut therefrom, to elevate and replace the log on the carriage.

The invention is illustrated in the annexed drawings; wherein:

Figure 1 is an end elevation of the apparatus, showing more specifically the independent skid-lifter or lifter-arm and the mechanism for operating the same; Fig. 2 a vertical sectional view on the line 2—2 of Fig. 3; Fig. 3 a top plan view of the mechanism as a whole; Fig. 4 a diagrammatic sectional view of the valve for operating the lifter, the valve for controlling the push arm (or arms) and the connections for operating the same; Fig. 5 a diagrammatic perspective view of the connections between the single operating lever and the three controlling valves, one each for the lifter, the push arm and the hook arm; Fig. 6 a vertical sectional view of the mechanism employed to raise and lower the lifter or movable skid member; Fig. 7 an end elevation of the supporting member for the outer end of the skid; Fig. 8 a perspective view of the lever or combined lever and rocker arm employed in connection with the skid; Fig. 9 a perspective view of the base or pillow-block upon which the lever is seated and rocks; and Fig. 10 an elevation of a modified structure which may be employed to raise and lower the movable skid.

The main object of the present invention is to produce a simple and efficient loading mechanism by which the log may be readily placed upon the saw-mill carriage, removed therefrom and turned, and again replaced.

A further object is to provide a suitable valve mechanism for controlling the pistons of the machine, which mechanism may be controlled by a single hand-operated lever, thus leaving the operator the free use of his feet, one of which may be employed to con-

trol a foot-lever or pedal which in turn controls the usual chain-feed, or the like, employed in connection with the skid-way.

A still further object is to provide a structure in which the valves and all joints which become subject to leakage due to wear are removed from the power cylinders and placed at a point or points where they are readily accessible.

Another object of the invention is to provide a superior form of bed-plate, upon which the power cylinders are mounted, and further, to so form the main push-arms that they may have a more extended and firmer bearing on their supporting shaft.

It is also an object of the invention to provide a simple and effective mechanism for raising and lowering the skid or lifter-arms.

With these and other objects in view, a detail description of the invention will be given, reference being had to the construction illustrated in Figs. 1 to 9 inclusive. In said figures, 1 denotes the main framework of the structure, upon which is placed the decking 2 which forms the support for the bed-plates 3 and 4, best shown in Fig. 3.

The fixed, inclined skid-way 5 may be of any improved form, and leads to a point adjacent to the carriage 6, partly shown in Fig. 2.

Any suitable feed mechanism for advancing the logs along the skid-way and any suitable lumber-stop device, such as those now commonly employed, may be used in connection with the skid-way, but inasmuch as these form no part of the present invention they are not illustrated.

A shaft 7 extends along the framework, parallel to the runway or tracks of the carriage, at the lower end of the skid-way, the shaft passing through bearings 8 formed at the outer ends of the bed-frames or plates 3 and 4 and through suitable pillow-blocks 9 arranged to one side of the skid-way 5, as indicated in Fig. 3. One of said blocks is shown in detail in Fig. 9, and is provided with an opening through which the shaft 7 extends. Each pillow-block is bolted securely to the timbers and is provided with two upstanding lugs or ears 10, between which is formed a rounded bearing 11 in which is seated a rounded member 12, formed upon the lower end of a combined lever and rocker-arm, shown in detail in Fig.

8. Said member is provided with an outwardly-extending arm 13, and in its upper face with a V-shaped recess or seat 14, adapted to receive the lower end of a link 15, the upper end of which fits in a rounded seat 16 formed in the under face of a supporting member or casting 17, in which the outer end of the movable or lifting skid-arm 18 is secured. Said casting is provided with downwardly-projecting side faces or walls 19, which at their lower ends are each provided with a curved or semicircular recess 20. Flanges or collars 21 extend outwardly from said lower walls and conform to the curvature of said recess, so that when the parts are lowered said flanges will come to rest upon the rounded faces of the lugs or ears 10 formed upon the pillow-block. Between the vertical walls 19 is formed a transversely-extending wall 22 and an inclined wall or web 23, the wall 22 tending to strengthen the structure and the web 23 likewise preventing the link 15 from being thrown too far forward upon the upward movement of the arm 13. The skid-arm, at its free end, is seated between upwardly-extending arms 24 (see Fig. 7), formed upon the casting, the skid-arm being bolted in place. The opposite end of the arm is fulcrumed or pivoted in a box or bearing 25 bolted to the side of the permanent skid-way 5. When the arm or lever 13 is thrown upwardly, into the position shown in Fig. 1, the toggle formed by the link and the rocker-arm will be straightened, and the movable skid-arm 18 is elevated at its lower end, so that it extends a distance above the upper face of the fixed skid-way 5. When the lever 13 is lowered, the free end of the skid arm will pass to a point just below the upper face of the fixed skidway 5. Under this construction it will be noted that the movable skid member 18 is not supported upon or actuated by the shaft 7, it being entirely independent thereof. If, however, it should be desired to support said member from the shaft, the construction shown in Fig. 10 may be employed, wherein a rocker-arm 26, having a rounded bearing 27 on its under face, is seated directly upon the shaft 7, the rocker-arm having formed in its upper face a seat or recess 28, adapted to receive the lower end of a link 29 which at its upper end is seated in a recess formed in a supporting frame or casting 30 for the movable skid member. In this, as in the former construction, there is substantially a toggle arrangement which, when the lever is thrown upwardly, tends to straighten the toggle and thereby elevate the movable skid member, and when lowered acts to break the toggle or to throw the link to one side, thereby permitting the skid member to be lowered. Two of said movable skid members are shown in Fig. 3, and it will be readily ap-

preciated that as many skid members may be employed as may be found desirable in any particular plant. They are all actuated simultaneously through the connection about to be described.

Extending downwardly from each of the rocker-arms or levers is a link 31, each of said links in turn being connected to an arm or lever 32, see Fig. 1, arranged in line with the link, said arms being rigidly secured upon a counter-shaft 33 which extends beneath the framing, as best shown in Fig. 3. To one of the arms 32 (Fig. 1) is secured, at its outer end, a link 34, which in turn is pivotally attached to the upper end of a slide 35, carried at the upper end of a piston-rod 36, working in a cylinder 37. The valve which controls the admission and exhaust of steam to and from the cylinder 37 and the means for positioning the valve will be set forth in detail in connection with the valve mechanism employed in conjunction with the pusher-arm and hook-arm cylinders.

In most of the saw-mills heretofore constructed, in which power cylinders are employed for actuating the pusher-arm and hook-arm, the valve mechanism for controlling the admission and exhaust of steam to and from said cylinders has been placed in the trunnions of said cylinders, and as said parts are usually floored over or covered by the log-deck, they are more or less inaccessible. Further, being placed directly in the trunnions, the wear incident to the movement of the cylinders upon the trunnions caused the same to leak more or less quickly after the plant had been put into operation. With the present construction; however, the valve mechanism is all arranged at a point below the framing, where it is readily accessible.

The power cylinder 38, for actuating the push-arm 39, and power cylinder 40, for actuating the hook-arm 41, and its hook 42, are mounted in the same manner.

Each of the cylinder supporting bed plates 3 and 4 is alike in form, being a broad, straight casting provided at its outer end with a bearing 43 which embraces the shaft 7, and with bearings 44 and 45 for the trunnions of the cylinder. As will be seen upon reference to Fig. 3, the lower or outer end of each of the arms 39 and 41 is forked or bifurcated, the members or bearings 43 making a close fit against the boxes or bearings 8. Thus said arms get a relatively wide bearing upon the shaft and the parts all serve to mutually support and sustain each other, the straight and relatively broad bed-plate standing the strains to which it may be subjected much better than the usual crooked plates now in use. The arm 39 is made fast to shaft 7 and serves to rotate the same. Arm 41, however, is swiv-

eled on the shaft, being provided with jaws 41^a which function with clutch collars 46, keyed to shaft 7. Said collars assist in maintaining the arm in place, and likewise, when the arm is thrown upwardly, cause the shaft 7 to rotate and thus cause all of the arms (39 and certain helper arms herein-after referred to) to move up against the log and prevent the same from skidding when the hook pulls the log over.

The piston-rod 47 of the power cylinder 40 is pivotally connected at 48 to the hook 42, Fig. 2, which latter in turn is fulcrumed at 49 upon the arm 41. As will be seen upon reference to Fig. 3, the hook arm is bifurcated, and is provided with outwardly-extending wings 50, which when the piston-rod is moved outwardly and the hook consequently thrown upward, pass about the end of the arm 41 until they enter the depressions 51 (Fig. 2) formed in the under side of the arm 41. Further outward movement of the piston-rod actuates the arm 41 directly, as the hook and arm are at such time locked together and move as one.

Each of the power cylinders 38 and 40 is provided with a controlling valve 52 and 53, respectively, Figs. 2 and 3, the valves being the same in form, one of which is shown in detail in Fig. 4. Said valve comprises a shell or casing 54 provided with a steam inlet 55, exhaust port 56 and steam ports 57 and 58, which are connected, respectively, to the pipes 59 and 60 (Figs. 2 and 3), which pipes pass through packing glands 61, secured in the outer ends of the trunnions of the power cylinders. Thus a steam-tight joint is effected between the cylinders and the pipes, which serve to convey steam to and exhaust the same from the power cylinders, the pipes, of course, being connected to the passages leading to the opposite ends of the cylinders, as is usual. A double-piston valve, having pistons 62 and 63 and an intermediate cut-off ring 64, is employed to control the passage of the steam to the inlet port 55 and one or the other of the ports 57 and 58, and to throw the exhaust port 56 into operative relation with the port through which live steam is not passed, said pistons being connected to a piston-rod or valve-stem 65, which in turn is pivotally connected by a link or rod 66 to a rocker arm 67 secured to a rocker-shaft 68. This shaft, as will be noted upon reference to Fig. 3, is located at one end of the apparatus and has secured to it a second rocker-arm 69, which in turn is connected by a link 70 and elbow-lever 71 to the valve-stem 72 of a double-piston valve 73, mounted in a valve-shell or casing 74, which valve controls the admission of the steam to and exhaust from the power cylinder 37 which actuates the movable skid arms 18.

As will be seen upon reference to Fig. 4,

the arm 69 is slightly longer than the arm 67; consequently, the piston valve 73 will be moved faster than the piston of the valve 52. Furthermore, as will be seen upon reference to Fig. 4, the valve 73 is given but a slight lap, and consequently a slight movement thereof will admit steam to one end of the cylinder 37 and exhaust it from the other. On the other hand, the piston of the valve 52 is given considerable lap, and it requires a relatively greater movement to effect an opening of the ports in said valve, and as a consequence the lifter arm 18 may be actuated either to raise or lower the same, independent of any movement of the push-arm, the operation of which is controlled by the valve 52.

The rocking of the shaft 68 is effected through the agency of a handle or lever 75 through which the shaft passes, said handle being provided with an opening 76, see Fig. 5, the opening being sufficiently large to permit the lever to be rocked independently of the shaft in line with the axis of the shaft upon a pin 77 which secures the lever to the shaft. When, however, the lever is moved at right angles to the axis of the shaft 68, said shaft will be rocked and as a consequence the piston-valve 73 will be moved in one or the other direction, and if the lever is swung far enough, the piston of the valve 52 will likewise be actuated.

The lever 75 is provided with a downward extension 78, to which a link or rod 79 is universally connected. Said link or rod in turn is connected to one end of an elbow-lever 80, the opposite end of which is connected to a piston-rod 81, to which is secured a double piston 82, that controls the valve 53, which as before noted, controls the operation of the piston of the power cylinder which operates the hook arm. A flat plate spring 83 (Figs. 4 and 5) will be employed in conjunction with the flat face formed upon the rocker-arm 67 to throw the rocker-shaft 68 back to its medial position and thus hold the valves in their central or inoperative position. It will thus be seen that the handle 75 may be rocked in line with the axis of the shaft 68, thereby positioning the piston 82 of the valve 53 and causing the hook arm to be actuated independently of any movement of the skid arm 18 or the push arm 39. On the other hand, all three of the members may be actuated together if so desired, or brought into action successively. The lever having a universal movement, permits this operation and leaves the attendant free to control the log-stop and the feed mechanism through levers or a foot pedal.

Under the usual installation, the sawyer or operator stands with one hand on the lever controlling the steam feed and the other hand on the lever controlling the log-loader, with one foot on the independent

skid-lifter controlling pedal and the other foot on the log-stop pedal. This arrangement is obviously unsatisfactory. By connecting up the parts as herein specified, so that a single lever will control the operation of the log-turning arm, the skid-lifter and the hook-arm, the operator is relatively free and he may readily use one hand to actuate the pedal employed for controlling the log-stop. The other hand, of course, may be readily used to operate the lever which controls the steam feed. Thus the operator is left at least one foot upon which to stand.

From the foregoing description it is thought that the operation of the mechanism will be understood by those skilled in the art.

The apparatus permits the hook arm to be operated to catch the log to turn it down onto the deck and thereafter to raise the skid arms 18 independently of any movement of the push arm 39, so that the log is slightly raised above the head block before the push arm comes into play. This prevents the log from catching on the nose of the block as it would otherwise do were the arms 18 not lifted prior to the actuation of the push arm 39, and the coacting helper arms 84 which are secured to the shaft 7 and move therewith when the same is operated through the push arm 39.

Having thus described my invention, what I claim is:

1. In a log-handling mechanism, the combination of a skidway; a push-arm; a hook-arm; independent skid arms located to one side of the skidway; a power cylinder for each of said members; and a single operating lever connected to the valve mechanisms of said power cylinders for securing independent operation of said cylinders.

2. In a log-handling mechanism, the combination of a skidway; a push-arm; a power cylinder therefor; a hook-arm; a power cylinder therefor; independent skid-lifting arms arranged at one side of the skidway; a power cylinder for actuating said arms; a controlling lever; connections between said controlling lever and the valve mechanisms of the push-arm cylinder and the independent skid-lifter cylinder for bringing the skid-lifter cylinder into operation prior to the operation of the push-arm; and connections between said lever and the valve mechanism of the hook arm cylinder, said connections being such that said valve may be operated independently of the operation of the other power cylinders.

3. In a log-handling mechanism, the combination of a skidway; a push-arm; an actuating cylinder therefor; a hook-arm; an actuating cylinder therefor; an independent skid-lifter arm; a power cylinder for actuating the same; a rocker-shaft; connections between said shaft, the valve for the cylinder of the push-arm and the valve for the cyl-

inder for the independent skid-lifter arm; a lever secured to said rocker-shaft to rotate therewith but capable of being swung in line with the axis of said rocker-shaft; and connections between said lever and the valve which controls the power cylinder of the hook-arm, whereby said hook-arm may be actuated by a movement of the lever independent of the actuation of the push-arm or the skid-lifter arm.

4. In a log-handling mechanism, the combination of a skidway; a push-arm; a power cylinder therefor; an independently movable skid-arm; a power cylinder therefor; a hook arm; a power cylinder therefor; a rocker-shaft; connections between said rocker shaft and the valve for controlling the power cylinder of the push-arm and the valve controlling the operation of the cylinder for the independent skid-arm, said connections being such that the last-named cylinder will come into operation prior to the operation of the push-arm cylinder; a lever secured to the rocker-shaft, the connection being such that the lever may be moved in line with the axis of the shaft without moving the same; and connections between said lever and the valve for controlling the hook-arm power cylinder, whereby the hook-arm cylinder may be actuated independently of the other parts.

5. In a log-handling mechanism, the combination of a skidway; a push-arm; a power cylinder therefor; an independent skid-lifter; a power cylinder therefor; a hook-arm; a power cylinder therefor; a valve for controlling the admission of steam to and exhaust from the power cylinder of the push-arm; a valve for controlling the admission of steam to and exhaust from the power cylinder of the independent skid-lifter, the last-named valve being given a lap less than that of the first-named valve; a lever for moving said valves simultaneously; and connections between said lever and the valve for controlling the admission of steam to and exhaust from the power cylinder of the hook arm.

6. In a log-handling mechanism, the combination of a skidway; an independent skid-lifting arm pivotally connected at one end thereto; and a toggle mechanism for raising and lowering the outer end of said skid-lifting arm.

7. In a log-handling mechanism, the combination of a skidway; an independent skid-arm pivotally connected thereto; a link arranged below the free end of said arm; and means for throwing the link into and out of vertical position, whereby the arm may be raised and lowered.

8. In a log-handling mechanism, the combination of a skidway; an independent skid-lifter pivotally connected at one end thereof; a link arranged beneath the free end of

said skid-lifter; a fixed bearing; and means interposed between said fixed bearing and the lower end of the link for throwing the link into and out of vertical position, whereby the skid-lifter may be raised and lowered.

9. In a log-handling mechanism, the combination of a skidway; an independent skid-lifter pivotally connected thereto; a link mounted below the free end of said lifter; a fixed bearing; and a combined rocker and lever-arm arranged between said bearing and the lower end of the link, whereby when said member is actuated the link will be thrown into and out of vertical position and the skid-lifter thereby raised and lowered.

10. In a log-handling mechanism, the combination of a skid-way; an independent skid-arm pivoted thereto; a link arranged beneath the free end of said skid-arm; a pillow-block having a seat or recess formed in the upper face thereof; and a combined lever and rocker-arm, the lower end of which rests in the seat and is provided in its upper face with a socket or recess for the reception of the lower end of the link.

11. In a log-handling mechanism, the combination of a skid-way; an independent skid-arm pivotally secured thereto; a casting secured adjacent to the outer end of said arm, the casting having flanges on its lower end; a link, bearing at its upper end in a seat or socket formed in the casting; a pillow-block provided with upstanding lugs, said block having a seat or recess formed therein intermediate said lugs; and a combined lever and rocker-arm, the lower end of which is seated in the recess in the pillow-block, said arm being likewise provided with

a recess in its upper face to receive the lower end of the link.

12. In a log-handling mechanism, the combination of a bed-plate provided at its outer end with a shaft-bearing; a shaft extending through said bearing; an arm in operative relation with the shaft, said arm being bifurcated and straddling the bearing formed upon the outer end of the bed-plate; a power cylinder pivotally mounted upon the bed-plate; and a piston-rod working in the cylinder and connected at its outer end to the adjacent end of the arm.

13. In a log-handling mechanism, the combination of a bed-plate provided at its outer end with a shaft-bearing; a shaft extending through said bearing; an arm the lower end of which is bifurcated and straddles the bearing formed upon the bed-plate and is in operative relation with the shaft; a bearing formed upon each side of the bed-plate adjacent to its rear end; a cylinder having trunnions resting in said bearings; a piston-rod connected to the adjacent end of the arm; pipes for conveying fluid under pressure to and permitting pressure to pass from said cylinder, the pipes passing through the trunnions; and valves located beneath the bed-plate for controlling the admission of fluid to and the exhaust thereof from said cylinder.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES E. CLEVELAND.

Witnesses:

FRANK J. WOLFF,
EARL J. LOHMILLER.

No. 4231

IN THE

United States Circuit Court of Appeals

FOR THE

NINTH CIRCUIT

D. J. MURRAY MANUFACTURING
COMPANY, a corporation,

Appellant,

vs.

SUMNER IRON WORKS, a corporation
and SILVERTON LUMBER COM-
PANY, a corporation,

Appellee.

SUPPLEMENT OF EXHIBITS TO TRANSCRIPT OF RECORD

*Upon Appeal from the United States District Court
for the District of Oregon*

FILED

MAY 24 1924

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Reproduction of Sumner Iron Works Bulletin No. 4 10

Photographic reproduction of infringing log turner, particularly showing the push-arm unit, installed by Sumner Iron Works at Vancouver, Washington, 1923, after this infringement suit had been instituted.

PLAINTIFF'S EXHIBIT 14 (*Trans.* 57, 60)



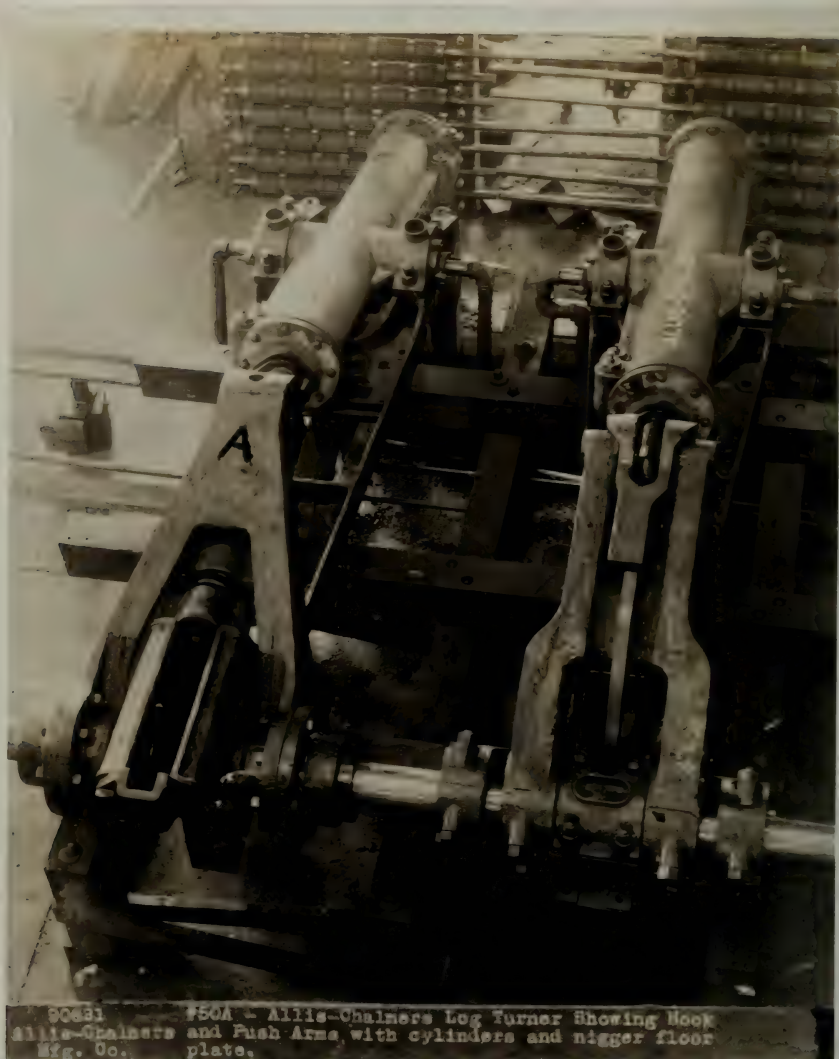
Photographic reproduction of infringing log turner, particularly showing the hook arm unit, installed by Sumner Iron Works at Vancouver, Washington, 1923, after this infringement suit had been instituted.

PLAINTIFF'S EXHIBIT 15 (*Trans. 57, 60*)



Photographic reproduction of Cleveland log turner as manufactured by Allis Chalmers, licensee, and installed in Jones Lumber Mill at Portland, Ore.

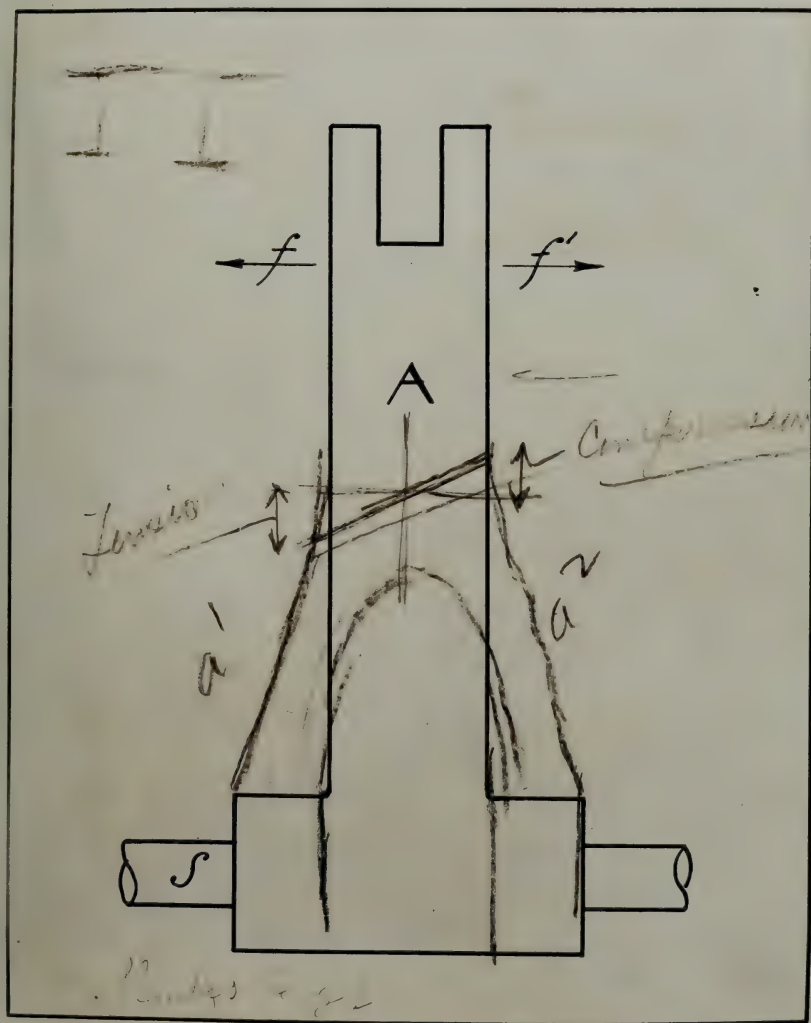
PLAINTIFF'S EXHIBIT 19 (*Trans. 81, 87*)



PHOTOGRAPHIC REPRODUCTION OF
PLAINTIFF'S EXHIBIT 22

(*Trans.* 103, 115, 135)

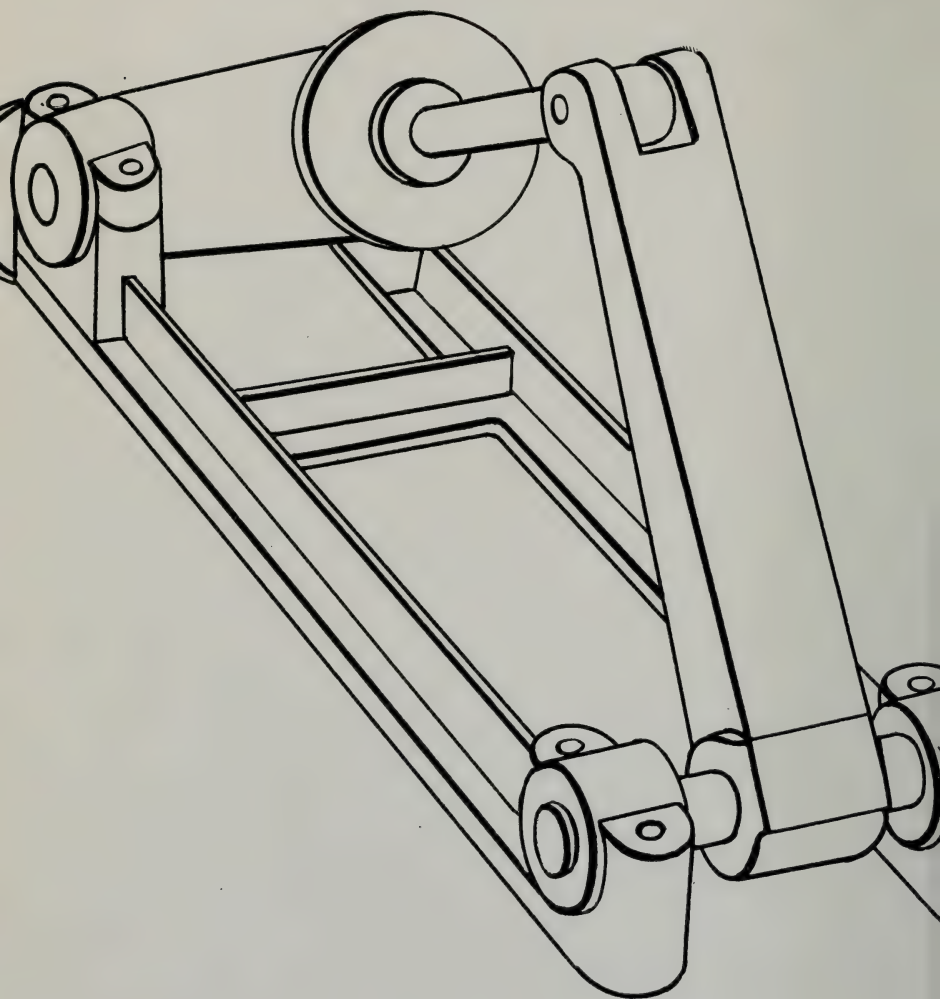
Note: The rough lines were drawn in red pencil on original sketch.



Outline cut of model of push-arm unit of straight-bed type of log turner seen by Sumner at Frazer River in 1906.

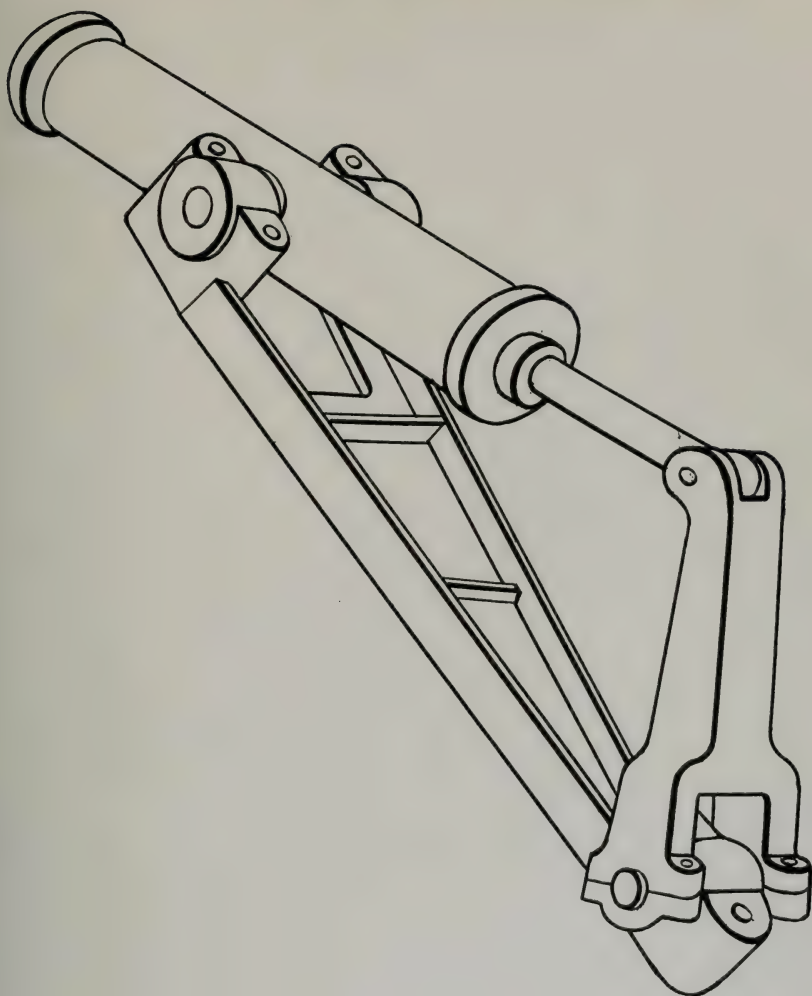
DEFENDANTS' INTER. EX. A AND EX. 27

(*Trans.* 67)



Outline cut of model of defendants' model of push-arm unit of Cleveland patent.

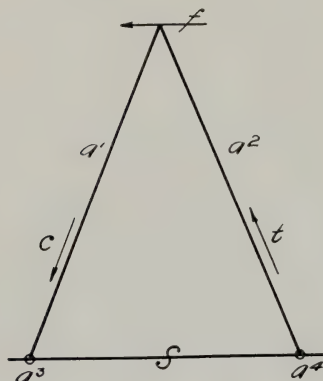
DEFENDANTS' EX. 26 (*Trans.* 66)



Diagrammatic sketch of A-frame principle.

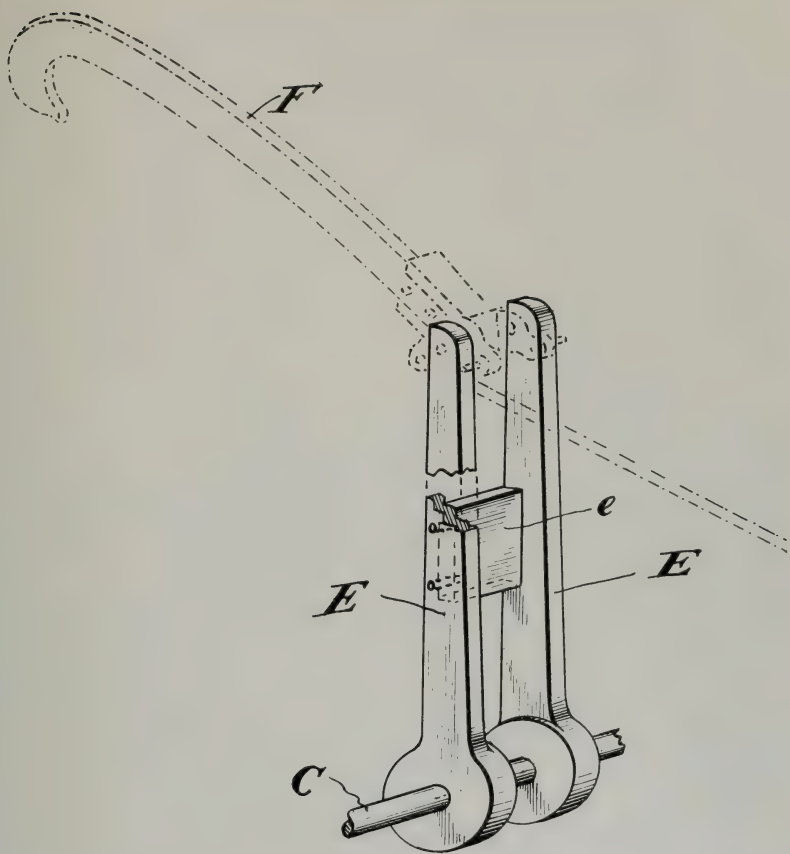
as applied to the construction exhibited by the Cleveland patent. (Hines. Trans. 96, 100, 102.)

PLAINTIFF'S EX. 21



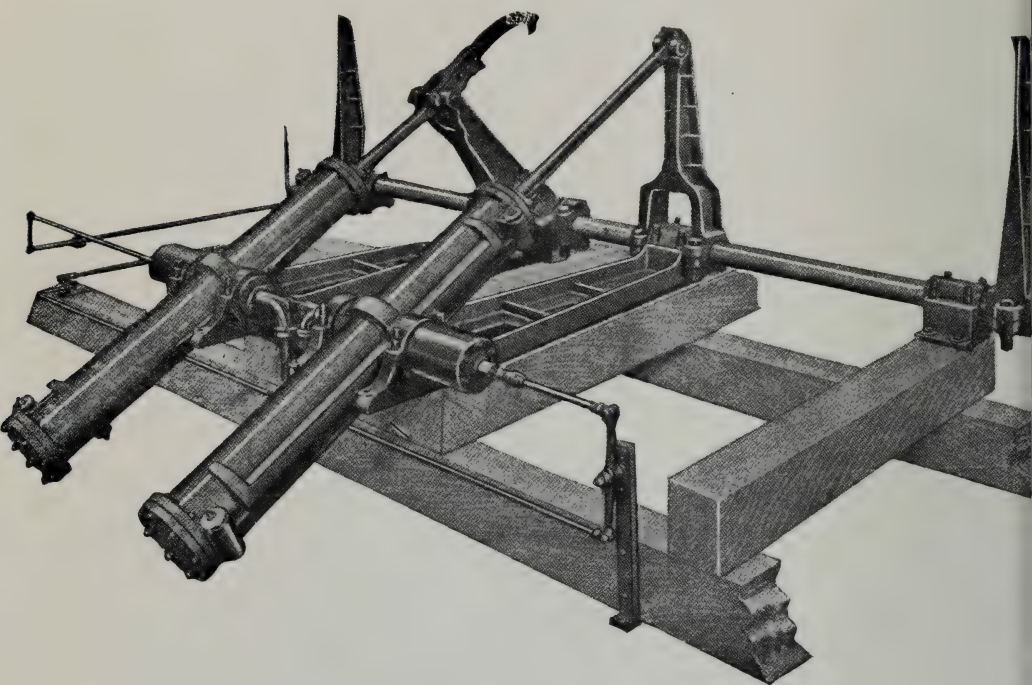
Cut of Arm E in patent of Flavel Simonson No.
448,592, March 17, 1891.

DEFENDANTS' EX. 29



Reproduction of the cut shown on the fourth page of *Sumner Iron Works Bulletin No. 4*, constituting Defendants' Exhibit 31. (Trans. 153.) On the front page of this bulletin is a cut identical with that shown in the cut of the advertisement of Sumner Iron Works appearing on the inside page of *The Timberman* of August, 1921, constituting Plaintiff's Exhibit 17. *Trans.*

DEFENDANTS' EX. 31 (*Trans. 153*)



"Sumner Standard Straight-Bed Log Turner".

Under the cut here shown appears the following:

* * * *

“BEDS. As the foundation of this machine, which we consider one of the most essential features, we have adopted the straight line style of bed *which we consider the best in principle, in practice and from an engineers' standpoint.* This construction eliminates any tendency to produce twisting strains on shaft or bearings which occur on the offset type of beds. *The fact that both beds are identically the same and are either handed makes it easier to stock or obtain repairs in case of breakage, as either bed can be used under either cylinder.*

* * * *

“ARMS. *The push and hook arms are made of electric cast steel and designed to straddle the main shaft bearings on beds.* The pins and pin bearings on the outer ends of the hook and push arms are exceptionally large and long which greatly prolongs the life of these parts. The cast steel hook bar socket is designed with an exceptionally deep throat which eliminates the possibility of bending the piston rod, which often occurs in faultily designed turners, causing expensive repairs and delays.”

IN THE
United States Circuit Court of Appeals
FOR THE
NINTH CIRCUIT

D. J. MURRAY MANUFACTURING
COMPANY, a corporation,

Appellant,

vs.

SUMNER IRON WORKS, a corporation
and SILVERTON LUMBER COM-
PANY, a corporation,

Appellee.

APPELLANT'S BRIEF

*Upon Appeal from the United States District Court
for the District of Oregon*

T. J. GEISLER

Attorney and Counsel for Appellant

IN THE

United States Circuit Court of Appeals

FOR THE

NINTH CIRCUIT

D. J. MURRAY MANUFACTURING
COMPANY, a corporation,

Appellant,

vs.

SUMNER IRON WORKS, a corporation,
and SILVERTON LUMBER COM-
PANY, a corporation,

Appellees.

APPELLANT'S BRIEF

*Appeal from the United States District Court
for the District of Oregon.*

HON. R. S. BEAN, Judge.

This is an appeal from the decree adjudging invalid and void, for lack of invention, Claim 12 of the patent granted to Charles E. Cleveland, September 7, 1909, No. 933,231, for an improvement in Log Loading

Mechanism, commonly called a *Log Turner*; and on such claim alone this suit was brought.

The appellant corporation is a manufacturer specializing among other things in saw mill machinery; and is the assignee of the entire interest in the patent.

The appellee Sumner Iron Works also specializes in saw mill machinery, and the controversy arose by this appellee entering the field *competitively* against appellant, with knowledge of said patent, and by choice making and selling a log turner which embodies the identical combination described in said Claim 12.

The appellee Silverton Lumber Company is using one of the log turners manufactured and furnished by the Sumner Iron Works.

The Appellee Summer Iron Works Had Direct Notice of Said Cleveland Patent.

Mr. Sumner, Vice-President and General Manager of this appellee corporation, testified on cross-examination (Trans. 39) :

Q. Did you receive any advices or notice from the plaintiff that you were infringing the Cleveland patent in suit?

A. Yes, I think we had a letter shortly * * * shortly after the Murray people had purchased the patterns and drawings, and whatever it was from

the Geddings & Lewis people, and saying that * * * we were infringing, and I think we answered them back and cited the information that we had from Washington, and I would imagine that that was two or three or four years ago, sometime ago anyway.

The assignment of the Cleveland patent to the appellant so referred to is dated March 30, 1917. (Trans. 156.)

The pleadings raised the usual issues of patent suits.

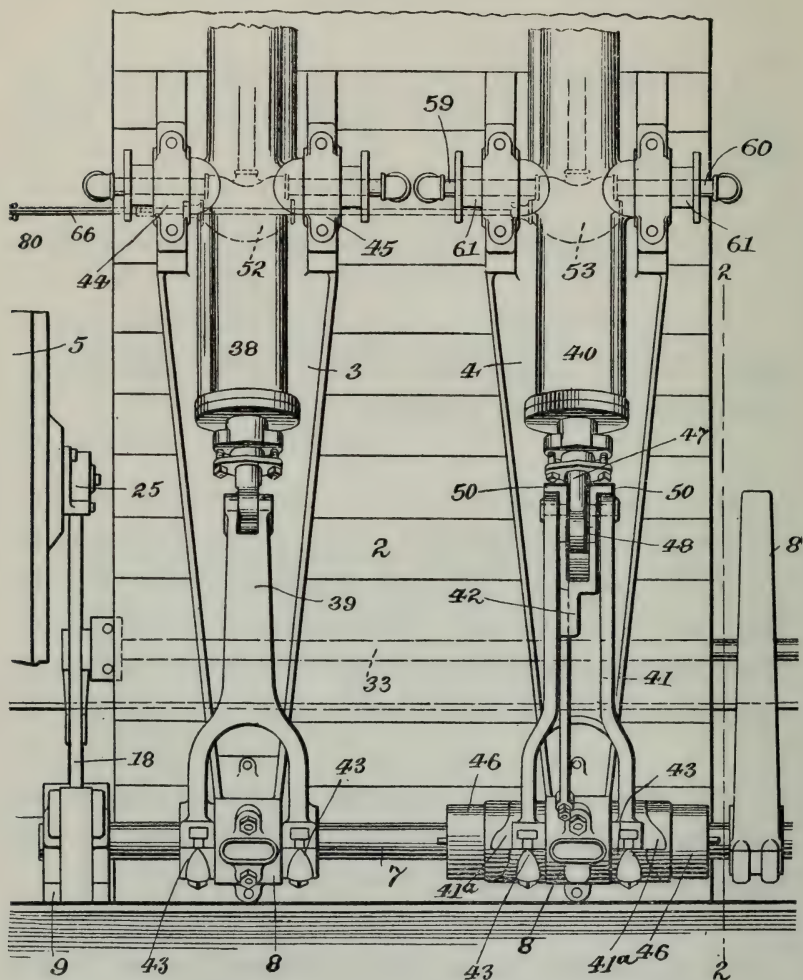
A copy of the Cleveland patent (Plaintiff's Deposition, Ex. A, Trans. 28, 155-290) is, for convenience inserted at the end of this brief.

Infringement of Claim 12 was conceded by appellees prior to the trial of the case by their answers to the interrogatories filed by appellant under Equity Rule 58. (Trans. 14.) Such answers stated below. Thus the only question involved is:—Is said Claim 12 valid?

The combination in question appears twice in the Cleveland log turner; once in the push-arm 39 and again in the hook-arm 41.

The elements of the combination stated by said Claim 12 comprise the following parts, all clearly shown by said Fig. 3 of said patent, which for convenience sake is here produced.

Left hand portion of Fig. 3 of the drawings of
Cleveland's patent.



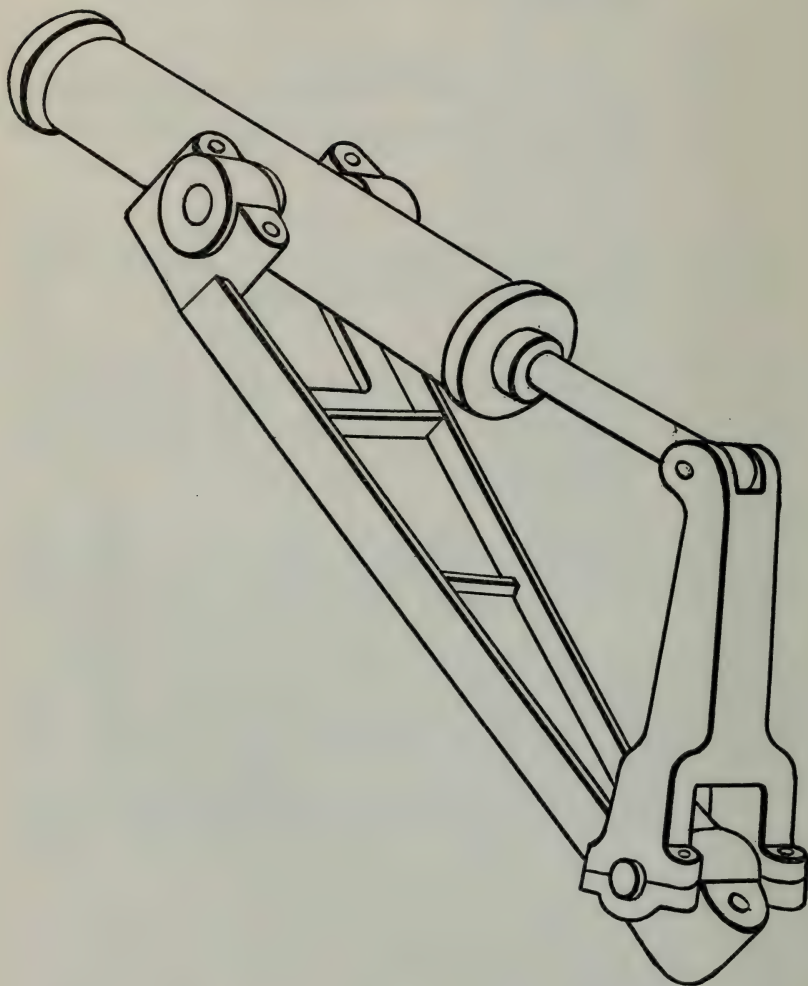
The claim reads:—

- (a) “A bed-plate (3 or 4) provided at its outer end with a shaft-bearing (8);
- (b) A shaft (7) extending through said bearing;
- (c) An arm (39 or 41) in operative relation with the shaft;
- (d) *Said arm being bifurcated and straddling the bearing formed upon the outer end of the bed-plate;*
- (e) A power cylinder (38 or 40) pivotally mounted upon the bed-plate;
- (f) A piston-rod working in the cylinder and connected at its outer end to the adjacent end of the arm.”

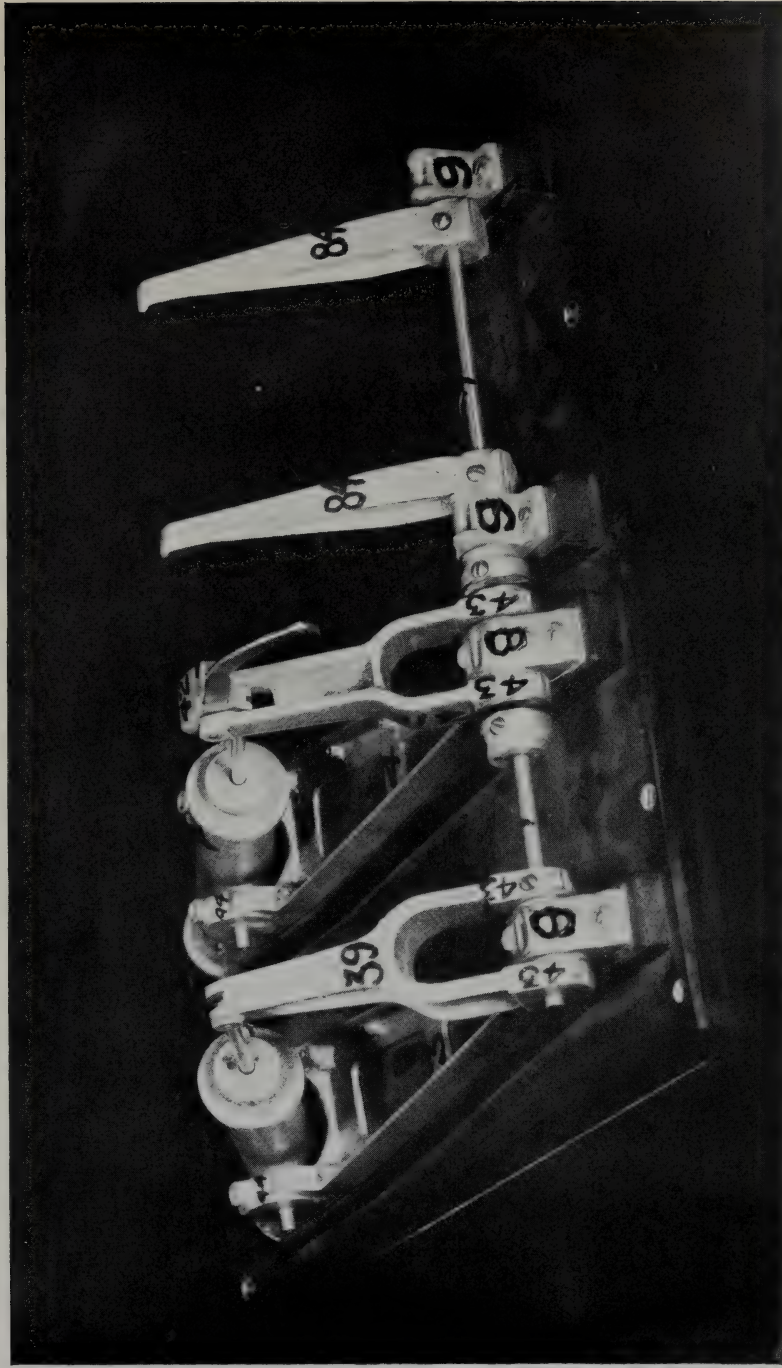
A model of the combination covered by said Claim 12 is shown by Plaintiff's Exhibit 10, a photo cut of which is given in the Transcript p. 285, and is here inserted for convenience.

The combination as embodied in the unit composing the "push arm" of the patent is also shown by Defts'. Ex. 26, an outline cut of which will be found in appellant's Supplement of Exhibits to the Transcript of Record, p. 7, and such cut is for convenience given here also.

DEFENDANTS' EX. 26 (*Trans. 66*)



Photographic Reproduction of Model of Cleveland Log Turner
PLAINTIFF'S EXHIBIT 10



Patentee Cleveland in the specification of his patent described the purpose of his invention and its operation—with respect to the combination covered by said Claim 12—as follows:

(See patent, page 1, lines 9 to 14 inclusive)

“My present invention pertains to an improved log-handling mechanism designed more particularly to load the log onto a saw mill carriage, to turn the same after a slab has been cut therefrom, to elevate and replace the log on the carriage.

* * * * *

“The main object of the present invention is to produce *a simple and efficient* loading mechanism by which the log may be readily placed upon the saw mill carriage, removed therefrom and turned, and again replaced. (Ib.. p. 1, lines 44 to 48 inclusive.)

* * * * *

“Another object of the invention is to provide a *superior form of bed-plate*, upon which the power cylinders are mounted, and further, *to so form the main push-arms that they may have a more extended and firmer bearing on their supporting shaft*. (Ib. p. 1, lines 64-69.)

“A shaft 7 extends along the framework parallel to the runway or track of the carriage, at the lower end of the skid-way, the shaft passing through *bearings 8* formed at the outer ends of the bed-frames or plates 3 and 4 and through suitable

pillow-blocks 9 arranged to one side of the skid-way 5 as indicated in Fig. 3. (Ib. p. 1, lines 92-99.)

“Each of the cylinder supporting bed plates 3 and 4 is alike in form, being a broad, straight casting provided at its outer end with a bearing 8 which embraces the shaft 7, and with bearings 44 and 45 for the trunnions of the cylinder. As will be seen upon reference to Fig. 3, the lower or outer end of each of the arms 39 and 41 is forked or bifurcated, the members or bearings 43 making a close fit against the boxes or bearings 8. Thus said arms get a relatively wide bearing upon the shaft and the parts all serve to mutually support and sustain each other, the straight and relatively broad bed-plate standing the strains to which it may be subjected much better than the usual crooked plates now in use.

“The arm 39 is made fast to shaft 7 and serves to rotate the same. Arm 41, however, is swiveled on the shaft, being provided with jaws 41a which function with clutch collars 46, keyed to the shaft 7. Said collars assist in maintaining the arm in place, and likewise, when the arm is thrown upwardly, cause the shaft 7 to rotate and thus cause all of the arms (39 and certain helper arms 84 hereinafter referred to) to move up against the log and prevent the same from skidding when the hook pulls the log over.

“The piston-rod 47 of the power cylinder 40 is pivotally connected at 48 to the hook 42. * * *

The hook arm 41 is bifurcated, and is provided with outwardly extending wings 50, which when the piston-rod is moved outwardly and the hook consequently thrown upward, pass about the end of the arm 41 until they enter the depressions 51 (Fig. 2) formed in the under side of the arm 41. Further outward movement of the piston rod actuates the arm 41 directly as the hook and arm are at such time locked together and move as one."

(Ib. p. 2, lines 112 to 130 inclusive, and page 3, lines 1 to 25, inclusive.)

The Concession of Infringement

by appellees is found in their answers to the following interrogatories propounded by appellant, viz:

"9. Referring to Fig. 3 of the drawings forming part of the Cleveland patent here in suit; was there at the date of the commencement of this suit, used in the plant of the defendant, Silvertown Lumber Company, log handling mechanism having a straight bed-plate like that marked 4 in said figure? A. *Yes*.

10. If so, did said bed-plate have a bearing like that marked 8 in said figure? A. *Yes*.

11. If so, did a shaft pass through said bearing like the shaft 7 of said figure? A. *Yes*.

12. If so, did said log handling mechanism also embody a cylinder and piston like 38 in said figure? A. *Yes*.

13. If so, did the mechanism embody an arm connected to said piston like the arm 39 in said figure? A. *Yes.*

14. If so, did said arm terminate in a bifurcation straddling said bearing on the bed-plate in similar manner as in said figure? A. *Yes.*

15. Was said log handling mechanism installed in the plant of the Silverton Lumber Company furnished directly or indirectly by the defendant, Sumner Iron Works? A. *It was furnished directly by the defendant, Sumner Iron works."*

The Prior Art Was Shown by Appellees To Be as Follows:

Prior to answering the bill appellees propounded on their part the following interrogatories: (Trans. 12).

"16a. State whether the subject matter illustrated in the accompanying photographic print marked Defendant's Interrogatory—Exhibit "B" is or is not a substantial representation of the "usual crooked bed-plates now in use" which are referred to in the words last quoted in line 128, page 2 of the specification of the patent in suit. A. *It is.*

17a. State whether said exhibit is or is not a substantial illustration of what is known as the Simonson Log Turner.

A. *This exhibit does illustrate the log turner referred to.*

18a. State whether the log turner shown in Defendants' Interrogatory—Exhibit "A" was or was not known to be of public knowledge or use in the United States before April 13, 1907.

A. *Yes, according to plaintiff's information, but plaintiff has no definite knowledge."*

These Exhibits will be found on Pages 288 and 289 of the Transcript.

Appellees' answer sets up twenty-one alleged anticipating patents marked Defendants' Exhibits 1 to 20 inclusive—one exhibit being marked 51½. These patents are to be found beginning on page 178 of the Transcript. They are not specifically considered by the lower Court in its opinion. (See opinion, Trans. p. 167.)

Appellees allowed these patents to speak for themselves as it were, for they did not explain their pertinency to the issue, except in pointing out by these exhibits those types of log turners which constituted the prior art when Cleveland entered the field; also for showing the use of a bifurcated arm *per se* as an element in various types of machinery, which of course no one disputes.

Appellant will state briefly only the construction apparent from the drawings of these patents.

Defendants' Exhibit 1, patent No. 48658, granted to Collier July 11, 1865. This invention relates to a Harvester Pitman. Its pertinency not explained by appellees; probably introduced merely to show the use of a bifurcated arm.

Defendants' Exhibit 2, patent No. 121,355 to Godwin, dated November 28, 1871. This patent relates to an improvement in Oscillating Engines. Its pertinency to the issue was not explained by appellees.

Defendants' Exhibit 3, patent No. 134,117 to Wheeler, dated December 17, 1872, relates to an improvement in Pitmen. Its pertinency is not explained.

Defendants' Exhibit 4, patent No. 309,103, to Schofield, dated December 9, 1884, relates to a log loader of a wholly different type of mechanism than here in issue. Pertinency not explained.

Defendants' Exhibit 5, patent No. 382,760, to Erwin, dated May 15, 1888, relates to improvement in Air Compressor. Pertinency not explained.

Defendants' Exhibit 5 $\frac{1}{2}$, patent No. 408,760, to Simonson, dated August 13, 1889, for improved Log Lifting and Turning Machine. This patent was what is believed to be the first or rudimentary example of the so-called Simonson type of log turner. It shows the provision of a power operated push arm (d) and hook arm (d n), the latter being operated by a rope (s).

Defendants' Exhibit 6, patent No. 448,588, to Simonson, dated March 17, 1891, for Log Lifting and Turning Machine. This patent apparently is a refinement of the original Simonson Log Turner.

Defendants' Exhibit 7, patent No. 448,590, to Simonson, dated March 17, 1891, for an improvement

in Log Loader and Turner. This apparently shows a variation in construction of the original Simonson Log Turner.

Defendants' Exhibit 8, patent No. 448,591, to Simonson, dated March 17, 1891, for a Log Lifter and Turner, apparently another variation of the original Simonson Log Turner. Much ado was made about this patent because it embodied what was termed by appellees a bifurcated arm (E). Patentee describe this part in his specification (p. 1, lines 38 to 42): "E E are two arms secured on shaft C a short distance apart, and in the upper end of these arms is pivoted the hook F, which when down rests on a block e, secured between arms E.

The purpose of this arm E *has nothing in common with the Cleveland arms 39 and 41 of his patent which are bifurcated in order that they may straddle the bearings 8 on the outer ends of the bed plates 3 and 4 respectively.*

And it is to be noted that the construction here shown does not include a bed-plate. (See test of Thomas for appellees, Trans 75.)

Defendants' Exhibit 9, patent No. 448,592, to Simonson, for Log Lifter and Turner, dated March 17, 1891. This patent shows a further refinement of the Simonson Log Turner.

Defendants' Exhibit 10, patent No. 448,593, to Simonson, dated March 17, 1891, for Log Lifter and

Turner, also apparently shows a further refinement of the Simonson Log Turner.

Defendants' Exhibit 11, patent 483,014, to Powers, dated September 20, 1892, for improvement in Steam Engine. The pertinency of this patent was not shown. Probably merely relied on as another instance of a bifurcated arm *per se*.

Defendants' Exhibit 12, patent No. 531,861, to Rhodes, dated January 1, 1895, for improvement in Gas Engine. Pertinency is not explained.

Defendants' Exhibit 13, patent No. 559,192, to McNerney, dated April 28, 1896, for Steam Log Loader and Turner. Pertinency not explained.

Defendants' Exhibit 14, patent No. 623,002, to Fitzgerald, dated April 11, 1899, for a Log Canter. Pertinency not explained.

Defendants' Exhibit 15, patent No. 694,459, to Carter, dated March 4, 1902, for Connecting Device, as applied "to a washing machine" (specification, p. 1, line 29). Pertinency not explained, probably relied on merely as another instance of the common use of a forked arm in mechanical structures.

Defendants' Exhibit 16, patent No. 759,857, to Botkowski, dated May 17, 1904, for Valve Mechanism for Engines. Pertinency not explained.

Defendants' Exhibit 17, patent No. 852,231, to Kennedy, dated April 30, 1907, for Log Turner. Pertinency not explained.

Defendants' Exhibit 18, patent No. 875,297, to Stanley, dated December 31, 1907, for Gasoline Engine. Pertinency not explained.

Defendants' Exhibit 19, patent No. 905,721, to Lindberg and Fitzgerald, dated December 1, 1908, for Oscillating Engine. Pertinency not explained.

Defendants' Exhibit 20, patent No. 992,212, to Kratsch, dated May 16, 1911, for Skid Lifting Device.

It will be noted that this Kratsch patent shows bed plates on which the devices comprising the combination for effecting the operation of a push arm and the combination effecting the operation of the hook arm are respectively mounted.

It will further be noted that this Kratsch patent shows the same type of bed-plate as Defendants Interrogatory Exhibit "B" and which is commonly designated as the *crooked bed* type (see Exhibit, Trans. p. 289, also p. 33). Patentee Kratsch refers to said Simonson type on page 1, line 43 of his specification and states that his "invention is illustrated as applied to a loading machine of the type known as the Simonson Log Loader and Turner." This Kratsch patent was issued a year and eight months (May 16, 1911) after the Cleveland patent (September 7, 1909); and besides has no bearing on the issue, being merely cumulative of Defendants' Interrogatory Exhibit "B."

The earlier log turners, for example those shown by the Simonson patents constituting Defendants' Ex-

hibits 5½ to 10, were wholly unfit for the heavy work of the Pacific Coast. They had no bed-plates. "The brackets which carry the shaft directly rest upon the floor * * * and the floor would not be the full equivalent of the bed-plate now in use." That was the statement of Appellees' own expert witness, Thomas. (Trans. p. 76.)

In brief, the defense of appellees may be termed a *synthetic defense*.

Defendants-Appellees being *interrogated* by appellant *as to the bearing* of said bunch of patents, pleaded in the answer, on the combination in issue, answered: (Trans. 13).

1. "Specify as to each of the patents cited in paragraph XIV of the answer herein, the particular mechanical feature or combination of parts described therein, on which the defendants will rely on the trial of this case as instances of prior publication of the patented invention here in suit.

A. "*None of the patents* designated in said interrogatory *are relied upon* to show an exact duplication of the construction shown in the patent in suit, but all show, *collectively*, that prior state of the art upon which said patent was predicated, and show it to anticipate any invention exhibited in the subject matter of Claim 12 of said patent—the sole claim relied upon by plaintiff."

And the appellees "let it go at that"—to use a vernacularism.

The Problem When Cleveland Entered the Field and the New Results Attained by Him

The testimony of Mr. Cleveland, the patentee, was taken by deposition in Dothan, Houston County, Alabama, where he had gone to spend the winter because of ill health. (Trans. 155, 161.)

Mr. Cleveland is a retired manufacturer, sixty-two years of age.

He testified (Ib. 156):

“I had handled log-handling mechanism over a period of approximately twenty years, prior to April 13, 1909, because of my being engaged in the designing of sawmill machinery. I have eight or ten other inventions relating to log-handling or sawmills mechanism, and I obtained U. S. Patents for all of these inventions. * * *

“Q. Will you state generally the circumstances surrounding the conception and development of the invention defined by this claim twelve.

“A. (By way of Explanation.) Simonson's Log Turning Machines, are known in the art as a particular type of machine, regardless of who the manufacturer is, and in referring to my invention, I use the name of Simonson Turner broadly. Some time after Mr. Simonson secured patents on his turner Nos. 408,760; 448,588; 448,590; 448,593; Mr. Simonson called at Fon du Lac, Wisconsin, and endeavored to arrange with DeGrote Giddings

& Lewis to manufacture his turners. About that time or shortly after, I was employed by the said DeGrote Giddings & Lewis, as sawmill machinery designer, and while the said DeGrote, Giddings & Lewis were not interested and did not care to manufacture the turners for Mr. Simonson, it caused them to think seriously of manufacturing *heavy* sawmill machinery for the Pacific Coast, believing it was a good field for their operation; therefore they discussed from time to time with me the designing of machinery for that purpose. Therefore, when the Simonson's patents were about to expire we gave serious thought to the design of an improved Simonson turner, and this led up to my invention and subsequent patent. * * * I first disclosed the invention defined by said claim 12 to others some time in January, 1907. * * * The first drawing of the invention defined by said claim 12 I made some time in January, 1907. * * * The first log turner embodying said claim 12 was built and shipped to the Albion Lumber Company, Albion, Mendocino County, California, January 20, 1909. This log turner was successfully operated. I cannot remember the number of log turners *subsequently installed*, but there were certainly *quite a few*, among which, one was shipped to Portland Machinery Company, Portland, Oregon, and another to Brace & Hergert Mills Company, Seattle, Washington. The actual construction work began about October 1, 1908, on the turner shipped to Albion Lumber Co. * * * *The object of the invention* defined by said claim 12 was to build a

machine having a stronger arm either for the push arm or hook arm, and the construction shown in my invention was much stronger arm than any other in use at that time.

“All of the turners of which I had knowledge at the time I brought out my invention had straight arms with a single bearing on the shaft. Now, it is a well-known fact that the weakest part of the log loader arm is near the shaft, and not in fact near the top of the arm. It was therefore my intention to construct an arm that was stronger near the shaft, or in my belief the weakest part. This I accomplished by making an arm having *two bearings on the shaft* in place of one, or, *bifurcating* the lower end of the arm. At the time I conceived my invention, in the year 1907, I saw the Simonson's Log Turner constructed by the Challoner Machinery Company of Oshkosh, Wisconsin, and later saw them in actual use in a number of saw mills on the Pacific Coast. These Simonson turners worked successfully in a general way, but in visiting the sawmills on the coast, I was visibly impressed with the *number of broken log loader arms* generally laying around these mills. The *bed-plates as contained in the Simonson machines were all built with an offset*, or, in other words, *the bearing at the end of the bed-plate in which the shaft rotated, was not in a center line with the steam cylinder*, but was to one side of the same. The arms were constructed with a single bearing on the shaft, as shown in Defendant's Interrogatory

Exhibit "B." (See cut Trans. 289.) The number of broken arms I observed around the mills prior to the conception and development of my invention influenced me in constructing the pusher and hook arms with a double-bearing on the shaft, or, in other words bifurcating the shaft end of the arm. The differences between the Simonson bed-plate, and its bearing and the bed-plate, bearing the arm connection, as developed by me and defined in said claim 12 is this: The original Simonson as before stated, has a bed-plate with the shaft bearing offset to one side of the center of the cylinder, whereas, in *my construction the shaft bearing of the bed-plate is in direct line with the center of the cylinder and push-arm, and thereby equalizes the strain. The advantages* I proposed to secure by the changed construction was to get a *stronger and more symmetrical machine*. By making the arm bifurcated and thereby having a more substantial bearing upon the shaft, and a stronger arm, and having the shaft bearing on the end of the bed-plate in direct line with the center of the cylinder, which *construction was better to withstand the thrust of the cylinder*. The primary cause of breaking the arm of the old Simonson turner was because of poor design. The arms were all straight arms, whereas, in my construction the arms to which the piston rods are attached have a double bearing on the shaft, allowing for a more secure attachment to the shaft, *straddling the end of the bed-plate, coming together and forming a single arm from about*

midway to the top of the arm. This construction permitting a more equal distribution of the metal, and thereby making a broad, deep, and strong arm. I also observed that other parts associated with said arms were broken, principally the bed-plates. By my invention I intended to correct this condition by making a so-called "straight line," bed-plate, with practically all strains in a straight line. It is a well-known fact that a bed-plate constructed on a curve, or as I called it a crooked bed-plate, when the strain is applied has a tendency to straighten out, therefore, it is not as strong a construction as a bed-plate built on a straight line principle, as my construction is.

I am in the South at the present time because my physician thought it would be beneficial for me to spend this winter in a warmer climate, my home being in Indiana.

(Cross-Examination by Mr. Atkins, Trans. 161.)

By a designer I mean a man who originates and who details or makes the detail drawings. I attended to that. My activities covered practically all of the United States and Canada. * * *

My object in constructing the subject matter defined in claim 12 of the patent in suit was not only to make a stronger arm, but to arrange the same to be in direct line of the forces exerted on it, and therefore more equally distribute the forces.

* ● *

My improved log turner so far as defined in claim 12 turned the log in the same way as the old Simonson turner, but by a mechanism, which I regard as better. When I made my invention I did not know of any straight bed-plate in the Simonson type of turner, or of a bifurcated hook-arm in that type of turner.

(Witness is shown copy of patent to Simonson, No. 448,592, issued March 17, 1891; Defendant's Ex. 9; Trans. 210.)

A larger sized cut of the arm EE of Fig. 1 of this patent was made by appellant and introduced by appellees as Defendant's Ex. 29. It is of no importance but for convenience is reproduced at p. 9 of Supplement to Transcript of Record.

"I do not find in the drawings of this patent a bifurcated hook-arm. It is not a bifurcated arm in the sense that my design of the hook-arm is, as mentioned in claim 12. *The arm E shown in Figures 1 and 2, of this patent is a bifurcated arm to the extent only, that it has a divided bearing upon the shaft.* The arm E shown in the Simonson patent No. 448,592, illustrates two separate arms, with a distance piece bolted between these two arms. The above-mentioned arms *are perfectly straight, from the shaft upward*, whereas the arm shown in the Cleveland patent in suit, and marked 39, is an integral casting having a *fork lower end* for attaching to the shaft.

“I understand the definition of bifurcate is to divide in two directions. The arm E referred to in the Simonson patent last named as before stated is simply two arms extending in the same direction to the shaft. I claim that my hook-arm is stronger, not only because it is attached to the shaft by two bearings, but also the fact that *these two bearings extend upward and converge into a central arm*, all forming an integral part of the arm. It is not a mere question of the weight of metal. The design has everything to do with the strength or a casting or smiliar parts, for instance a board is much stronger placed on edge or will sustain a greater weight, than if the board is laid flat and the weight applied. Therefore in designing this arm in question I place the member with a greater distance crossways the shaft, and which would be stronger than for instance a square arm containing the same amount of metal. I do not wish to be understood as stating that an arm would be strengthened by cutting out a portion of it at its bearing end to effect a bifurcation. Design has everything to do with the strength of materials. *The mere taking, for instance of a square bar, and slotting one end of it without an equal distribution of the metal, would weaken it as a whole*, and for the purpose intended.

Witness here shown photograph marked Defendant's Deposition Exhibit “B”, and being the identical photograph in the record marked *Defendant's Interrogatory Exhibit “A”*.

“I judge from an inspection of this photograph that it is some sort of an arrangement for pushing logs on the carriage. I do not remember ever having seen a similar outfit in all these details. * * * *I would regard the combination shown in this photograph—referring to Defendant’s Interrogatory Exhibit “A”—as materially different from the subject matter defined in claim 12 in suit, because the bed-plate shown in this photograph has two arms extended out towards the carriage and provided with two bearings for the same, with the arm placed between the bearings, which anyone skilled in the art would readily comprehend is not as strong as that shown in my patent in suit.*

“Q. In your opinion is there any advantage in a bifurcated arm straddling a single bearing on a straight bed-plate, over a bifurcated bed-plate having two bearings upon opposite sides of an intermediate arm, other features of the construction being equal?

“A. I think a bifurcated arm much stronger, because no machine is stronger than its weakest part, and the bed-plate shown in this photograph has two members extending out from the cylinder bearing the ends of which each contain a bearing for the shaft. Now then, there is more chance for defects in the two members than there would be in one. I mean by that, casting defects. Furthermore, if one of the bearings on these members wears more than the other, and it is highly probable that they would

not each wear alike, it would throw the strain on only one member, thereby springing the shaft and probably breaking that arm of the bed-plate. *With a bifurcated arm, and one bearing on a straight line bed-plate*, no matter how much wear or looseness there might be in this bearing, *the strains upon the arm and bed-plate would always be equalized*. I think there would be a probability of strain of the shaft of transversed dimension such as are used in the log turners on the West Coast. I think they can spring anything on the Pacific Coast. It is a big country, and big timber, but even if there should be no springs in this shaft, if one bearing wore more than the other, all of the strain would be thrown upon a single bearing, or a single member of the bed-plate. Any unequal wear upon any one bearing of the plurality of bearings which carry the shaft would occasion longitudinal disalignment of the shaft axis."

Further Evidence of the New and Useful Results Attained by the Cleveland Structure

AUGUST DEMANGEON was called as a witness by plaintiff. He is sixty years of age, is a practical machinist and designer and has devoted many years to the study of saw mill machinery. He is at present engineer for saw mill machinery of the Allis-Chalmers Manufacturing Co., of Milwaukee, Wisconsin, which specializes, among others, in the manufacture of saw mill machinery as applied to the work on the Pacific Coast. (Trans. 136-137.)

Mr. Demangeon's attention to the Cleveland patented log turner was first attracted through an advertisement in the trade papers and catalogs issued by the manufacturers of that log turner (Ib. 138). That was about twelve years ago. (Ib. 142.)

Being questioned as to the advantage of the Cleveland patented structure over the prior devices which he knew, Mr. Demangeon said: (Ib. 138.)

"In my judgment, the Cleveland type accomplishes the object desired in the best possible manner; *that is there is the greatest strength obtained at minimum cost*; the arrangement is such that it *occupies the least possible space*, and *all strains are taken care of in the most direct and simple manner*.

"The Cleveland method permits building of the machine with the *least amount of metal and also giving the maximum strength*. I believe the Cleveland model *can be built at less cost* and will answer the purpose in every possible way." (Ib. 140.)

"*Simplicity in the Cleveland machine, a single bearing in the Cleveland machine* as against two bearings in this Defendant's Exhibit A. (Compare models of arm units shown by Defendant's Ex. 26—representing the Cleveland patented structure—and Defendant's Exhibit 27, representing the Frazier River type, also shown by Defendant's Inter. Ex. A.) Two bearings are entirely unnecessary when the work can be accomplished with one bearing; furthermore the (Cleveland) arm being

bifurcated and having considerable spread and supported each side of the bearing is stronger in my judgment than the type of arm shown in Exhibit 'A'. In other words, *the purpose intended to be accomplished is accomplished in a manner that I consider new and novel.* At the time I first saw the Cleveland design I had never seen a similar combination of arrangement to answer the purpose." (Ib. 141.)

In referring to Plaintiff's Exhibit 19 ((showing a photograph of the modified type of Cleveland patented log turner now installed in the saw mill of Jones Lumber Company at Portland, Oregon, Ib. 80)), witness explained that the construction shown in the latter exhibit— (See p. 4, Supplement to Trans.)

"is the same principle as the Cleveland patent construction, but the two sides of the bifurcated arm are spread more than in the Cleveland patent, in order to accommodate the spring cushion floor plates used in connection with the nigger, and in order to be able to locate that floor plate in its proper position. (Ib. 143.)

The function of the so-called "nigger" is to turn the logs.

It is becoming customary on this coast to use "a nigger" in connection with the push-arm of a log turner, for the reason that much smaller logs are being brought to the mills and in consequence it is desirable to have both devices for use at the same time. (Ib. 143, 144.)

P. R. HINES, called on behalf of the plaintiff below, being examined at length as to the function performed by the different parts constituting the Cleveland patented combination, and the results attained by such combination, said:

“The function of a bed-plate is to make the machine self-contained, to give it a broad, firm base; if you get any settling or misalignment of parts you are very liable to get a very serious strain in the machine, so you put in a heavy bed-plate; * * * a slight misalignment will make sometimes a very serious strain in the machine and cause breakage, * * * In a log-turner, naturally with high pressure of steam on, pushing out against a log, there is a heavy strain thrown on the main bed-plate. Now, it is a well known fact that in the old art the crooked bed-plates broke quite frequently under the strain. (Trans. 94.)

Referring to Defendant's Inter. Ex. A and 27, witness said:

“It is possible to design an arm with a broad base and with broad hub, and it would be equally as strong, that anyone would concede who has a thorough understanding of mechanics, but it can be I am certain, demonstrated that the arm would weigh more.” (Ib. 95.)

In designing commercial machines, we keep upmost at all times *not only strength but price, be-*

*cause we have to sell this product, and castings are paid for according to weight, that is hundred-pound castings are generally quoted at a certain price, two hundred pound castings at a certain price, and when you get up to about a thousand pounds * * * we jump from probably a thousand to three thousand, the way the average steel foundry would quote, therefore any pounds of steel we can save and still get the requisite strength enables us to make competitive price, whereby we can go on the market and get business.” (Ib. 96.)*

“Competition in this particular class of work is extremely close; a matter of a hundred dollars one way or the other would probably frequently decide the buy.

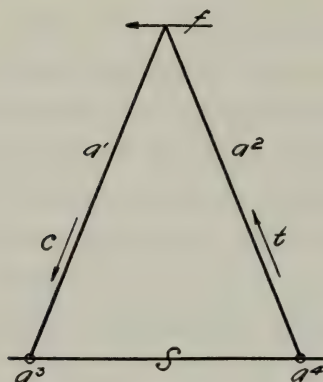
Mr. Hines estimated the difference in cost in favor of the Cleveland patented structure—as compared with the structure shown by Defendant’s Interrogatory Exhibit “A”, and 27—to be \$50.00 for each arm unit, and since there are two units in each log turner it would make a difference of \$100.00 in favor of the Cleveland structure. (Ib. 96, 99, 121.)

This estimated difference in cost in favor of the Cleveland patented structure was not contradicted by appellees.

Mr. Hines compared the bifurcated arm element as contained in the Cleveland patent to that of an A-frame construction referring to Plaintiff’s Ex. 21, which is here reproduced.

Diagrammatic sketch of A-frame principle
as applied to the construction exhibited by the Cleveland
patent. (Hines. Trans. 96, 100, 102.)

PLAINTIFF'S EX. 21



Mr. Hines said: (Ib. 100.)

“In an A-frame, a stress applied in the direction of the arrow *f* would cause a compression in member *a'* and a tension in *a2*. The direction of the compression force and the tension force are indicated by letters on this sketch. The compression is *c* and the tension is *t*. Now, in a structure of this kind, it will be direct compression and direct tension. There will be little, if any, of what we call flexure.”

“Flexure” designates the “tendency to bend the arm by a log that imposes resistance to the onward movement of the arm. In the operation of the machine you always have a log as the ultimate object to be acted upon by the machine.” (Trans. 123.)

“If it were a solid beam, you would get beam action and a flexure which is entirely different from the action of truss compression, and the stresses are much more equally distributed throughout the metal * * * All the metal is employed at its maximum strength, and for the same weight of metal, or for the same force ‘*f*’ *the weight of the metal would not be so great*. In figuring strength, we figure for strength, but in *figuring commercial machines we tend to keep the weight down so much as we can, especially out here on the coast, because we have to pay high freight, and there is no use making a machine any heavier than necessary*. It

only adds to the weight and the expense, both of manufacture and freight. * * *

“An analysis of the Cleveland arm in my opinion shows that the arm is not only strong in the direction of throwing the log, but is also *strong laterally against every possible thrust which it might get through the log moving*, the carriage moving, or being struck by carriage or any of those accidents that are liable to occur in handling a log quickly.” (Ib. 102.)

Mr. Hines in corroborating the statement of Mr. Cleveland, in his deposition, as to *casting defects*, said: (Trans. 104.)

“Q. What difficulties are apt to arise, if any, in casting a mass of steel to some particular shape?

A. Well, in casting steel we must not get a large accumulation of hot metal, as it is something that will cool suddenly at the other end of it so that as it cools off you will get what we call a casting strain. Now, it is highly desirable that this log turner work be done all in steel, and we go as far as we can in the stresses; then we go to a man who knows practically how to cast steel. *The arch in the Cleveland arm appeals to me. You haven't great weight or volume of metal that takes a long time to cool*, but you have a chance for a little expansion there that will not set up a big strain. I refer to the bifurcated portion of the Cleveland structure. * * * You can get a cast strain in metal which is far more

strain than any strain the piece so cast is subjected to in operation.”

“Defendant’s Exhibit 27 would require a larger flask and more careful pouring and gating.” (Ib. 106.)

Another advantage Mr. Hines pointed out in favor of the Cleveland patented structure was:

“Taking into consideration the *spacing of the journal boxes on the bed-plate*, Defendant’s Exhibit 27, there is one thing that I have not mentioned here. While not always necessary, *it is always considered desirable to have the bed-plates alike*. The reason for this is it only *requires one pattern*, one drawing, and consequently *it is much easier to manufacture two things alike than two different*. In this type of bed-plates (Exhibit 27) you must either bring out a long hub on the push-arm, or your hook and push-arm bed-plates will not be the same. The reason for that is that it is necessary to put a clutch on the hook-arm of some kind or other.” (Ib. 107.)

Note in this connection the *bulletin issued by appellee Sumner Iron Works*, designated “Bulletin No. 4”, Defendant’s Ex. 31 (see Supplement of Exhibits to the Trans. of Record, pp. 10-11) compare with Plffs. Ex. 16 showing a cut of Cleveland patented log turner as advertised in *The Timberman* of March, 1912. (Trans. 286) also given at the end of this brief.

Note that in said "Bulletin No. 4," on the fourth page, it is stated by this appellee, as a commendation for its *standard* type of log-turner, identical with the Cleveland patented structure:

"The fact that *both beds are identically the same* and are *either handed* makes it *easier to stock* or obtain *repairs in case of breakage* as *either bed can be used under either cylinder.*"

Summing up the merits of the Cleveland patented combination, Mr. Hines said that while the elements by themselves to a large extent are old—

"it is very easy now to say well it is nicely combined and nicely gotten up. I don't know myself that if I were designing that, that I would arrive at it, but now that it is finished I can say, yes it is a nice combination of *well placed metal*; it shows a *clear understanding of the actual thrusts and strains that a log turner is subjected to*, * * * in every way from a manufacturing standpoint and from a mechanical or engineering standpoint. If you take the thing as a whole, it certainly *fills exactly what you wish to do* with machine of this kind and *at a minnum of weight and material*. The *elements making up the device all mutually support each other*. The best way I can say is like a three-leg stool against a simple two-leg mechanism, which laterally is not stiff; this is supported in all directions." (Trans. 108, 109.)

Mr. Hines further said:

“My testimony in regard to the operation of these machines and the objections which I have mentioned is based on examination of the machines themselves, examination of the operator, and actual observation of the machines themselves in actual service, and not only the observation of Mr. Cleveland’s machine, but there are a great many log turners installed on this river of the old type—Simonson crooked bed type. A new machine doesn’t develop its weaknesses the first year. We find that it is only after years of service; the reason we pay particular attention to machines in operation is that, as the machines are operated over a period they commence to develop their weakness. These things we don’t get in design; and the best way to get what we call the bugs out of a machine is to see the old machine; they have been through what we call the mill; they have been through this hard service of handling the logs. * * * it is only by correcting these faults that we get a perfected machine.” (Ib. 111, 112.)

On cross-examination by Appellee’s attorney—the suggestion being made that the Cleveland patented improvement involved no inventive effort—Mr. Hines said:

“It is very easy to sit here, and says, well, we would do so and so; after a thing is accomplished it is very easy to say what you would do, but before it is accomplished or before perfected it is very difficult to say what you would do.” (Ib. 116.)

MR. D. P. HANSON, who has had years of experience in selling and installing saw mill machinery, said with regard to the Cleveland structure (Trans. 134) that if having to make an installation of a log turner and given the choice he would

“unqualifiedly take that machine, Defendant’s 26, (which is Defendant’s model of the Cleveland patented combination) for two particular reasons: The bifurcated arm, spoken of here, to my notion gives a better strength, and then the whole thing looks more symmetrical, neater, *more mechanically constructed*, according to my way of looking at it.”

JOHN F. MARLER, a witness called by plaintiff in the court below, head sawyer at the mill of Jones Lumber Company, Portland, Oregon, (Trans. 81) said that the saw mill used the Cleveland log turner of the type shown by Plaintiff’s Ex. 19. (A photo print of this is inserted in the Supplement of Exhibits to the Trans. of Record). He testified that it was *necessary to make the arms of the log turner strong* because they are *subjected to side thrust by the log at any time, especially since the carriage is not always brought to rest before the sawyer reaches for the log.*

“As a rule I reach for the log before I stop the carriage; when the carriage is about six feet from the stopping point I start after the log. By the time the carriage is stopped—in medium size or smaller logs—I aim to hit the log with the pick of the hook-arm by the time the carriage stops. Very

often I take the log off the carriage before it stops." (Ib. 82.)

The reason for reaching for the log before the carriage is brought to rest is:

"To make all the time possible, as time is very precious at the head rig. The entire payroll depends upon the head sawyer of the concern. This in some places runs fifty-six cents a minute, possibly, other places maybe it runs as high as a dollar a half minute, and all the time the head sawyer can save for his company means that much. And if you waited so that each device would be absolutely at rest before you moved the other device, you would be slowing down, you are lessening your output." (Ib. 84.)

Mr. Hines also referring to the strains imposed upon the arms of the log turner:

*"The strain may be any way * * * probably the average log scales five thousand feet and the weight of the green log is about six pounds per foot, board measure. In other words, we are dealing with a five thousand foot log weighing six pounds to the foot which would be thirty thousand pounds or fifteen tons; we often handle double that amount. Now, the question of side strains there are not only side strains but glancing strains of any kind, of a knot or burl, with fifteen tons which may be concentrated on this thing; we naturally have to consider other stresses than the pure weight of the log on the arm."* (Trans. 115, 116.)

Mr. Marler also called attention to the strains imposed on the arms of the log-turner. '(Ib. 83.)

Mr. Marler also explained in his way the inherent strength of the Cleveland patented construction:

"Supposing you were standing with your feet together like that, and would stand perfectly stationary, just like a statue, would it be easier to push you over standing in that position than it would if standing in this position." (Meaning with feet spread apart.) (Trans. 89.)

Mr. Marler on being cross-examined as to whether Defendant's Interrogatory Exhibit "A", and 27 did not show a device equal in all respects to the Cleveland patented improvement, said:

"If I were installing a mill, and had my choice of the structure shown in this Exhibit "A" of the Interrogatories, and a structure as is shown in the model of the Cleveland patent, I would choose the Cleveland patent on account of the forked arm, with respect to the strength of the arm." (Trans. 84.)

* * * "I would prefer the *forked arm and the single bearing*, because your shaft has a number of bearings along on it which support the shaft, and this (referring to the Cleveland arm) is the only bearing your main arm has, and it is better for it to have two bearings than to only have one, in my estimation." (Ib. 89.)

Mr. Hines in pointing out the advantage in the Cleveland structure over the structure shown by Defendant's Interrogatory Exhibit "A" and 27, said:

"The bed-plate shown as Defendant's Exhibit 27 (also Defendant's Interrogatory Exhibit "A") can be constructed to do just exactly what the bed-plate shown in the Cleveland model does, but in doing it, in the first place, when you shove the arms up against the log you have a stress in the bed-plate you would have a compression lengthwise of the bed-plate. * * *

Then, speaking of casting defects, added:

"There would be a difference in regard to casting defects which might arise in a bed-plate such as illustrated in the Cleveland model, and the bed-plate as illustrated in Defendant's Exhibit 'A' of the interrogatories; that is the same as Exhibit 27. There is always conceded the possibility of casting defects in cast steel, and bed-plates are generally made of cast steel. Naturally the larger the casting and the more intricate the casting, and the more it departs from a simple structure in cast steel * * * the more possibility there is for warpage, and for casting strains of all kinds, and also blow-outs, but in general in casting steel you have to keep your lines as simple and the distribution of metal as simple as you can, because it is very difficult to cast." (Trans. 97.)

Referring to the two bearings like that provided in the bed-plate shown by Defendant's Interrogatory Exhibit "A", and 27, Mr. Hines said:

"The setting work required of mechanics, and *line-up for the two bearings* to be bored separately, even where they bore right straight through—I am doing estimating continually on parts and on all sorts of different work in connection with machinery, and I have accurate costs and am furnished accurate costs up to date constantly on all classes of work, and I can say without hesitation that *double boring would cost more.*" (Ib. 98.)

It was in connection with the latter statement that Mr. Hines said, as already mentioned, that *the cost of construction in favor of the Cleveland structure*, as compared with Defendant's Interrogatory Exhibit "A", would be \$50.00 for each arm unit. Thus *about \$100.00* for the complete turner. (Ib. 99, 121.)

The Reason Why Appellee Sumner Iron Works Infringed

MR. SUMNER, vice-president and general manager of Appellee Sumner Iron Works, referring to the log turner furnished by his company to Appellee Silverton Lumber Company, testified:

(Trans. 32) "I am very familiar with the log turner furnished to the Silverton Lumber Company in this case. * * * I am acquainted with the circumstances under which the machine refer-

red to was built. Prior to 1913 or '14 we had been building log turners with a *crooked bed*, and I think it was *in 1913 that we suffered a loss by fire*; our *complete plant was burned*, patterns and everything else; *from that time on, we changed quite a good many of our designs* because we had to make new patterns for the whole line and possibly *profit-
ing by the experience* that we had had, * * * I might say we are quite fortunately situated by being in a sawmill town like Everett for the reason that we can watch all of the different machines, as it were, that we built, in operation. A great many times catching some things that were mistakes, and seeing that they were remedied when the next ones were built. The old turner, * * * termed the Simonson turner, * * * had *more or less trouble with the crooked bed*. In fact, I think they had more breakages with the crooked bed than they had with the arms * * * (Ib. 34). Now, I had never seen anything of the turners as built by Geddings and Lewis at the time we were making our changes. (The party here referred to is DeGrote Giddings & Lewis of Fon du Lac, Wisconsin, referred to in deposition of patentee Cleveland, (P. 157), and by Sumner (P. 39), as the parties who acquired the Cleveland patent and notified appellee Sumner Iron Works that it was infringing). "*I had seen some of their printed matter*, but the straight bed came to my mind for the reason that—I think it was in 1906—I was up to the Frazer (River) mill figuring on a job. They were going to re-

build that whole mill, and the old turner, I don't want this word Simonson to apply to that particular machine, but that type of machine; there was one of those old turners taken out of that old mill, and afterwards sold and went up to the Port Moody Mills; that was back in 1906 or '07; that had the straight bed; the beds had never broken. * * * *That very same turner* * * * *improved the old Simonson crooked bed; but* * * * *transferred that weak point to the arm; the point that is weakest in the whole machine.* * * *

Q. (Ib. 36) * * * You have said that you did *not* know the Cleveland machine at the time you adopted the design?

A. No, *I wouldn't want to say that*; I never had seen one of their turners, but I presume I had seen some of their literature. I wouldn't say that I hadn't, or I wouldn't say that I had, because that is taking too much from memory, * * * But, as far as the turners with the straight bed is concerned, the one I saw up there years ago was fresh in my mind when we were considering the redesigning of the turner after our fire, and our patterns had all been burned.

Q. When did you first become acquainted with the Cleveland patent in suit?

A. Why, I think that after we had the drawings made of the turners—and *we must have seen*

the advertisement of the Cleveland machine—we sent the whole thing on to Siggers & Company in Washington who had been our patent attorneys for a good many years, to have a search made to see if there was an infringement.”

A full page of the so-called Simonson Log Turner as improved by Cleveland’s patent was published in the March, 1912, issue of “The Timberman” on Page 85. See plaintiff’s Exhibit 16, Trans. 286; also end of this brief.

The cut in said advertisement, as will be noted, clearly shows the patented Cleveland combination.

(Said attorneys’ report is dated August 20, 1920, being tendered in evidence and marked for identification, Defts. Ex. 21; the court ruling that “it is not competent evidence.” Trans. 37.)

But appellee had had another report from the same attorneys “long prior to this report” (Ib. 38).

Mr. Sumner being questioned how they arrived at the infringing construction made by his company, said:

“Q. In arriving at the construction of the log turner as you built it, and which is claimed to infringe the Cleveland patent, did you, or did you not, copy the Cleveland design?

A. Well, it is very similar to the Cleveland design; very similar for the reason that the design in the construction was old; we had been building it for years.

COURT—What counsel wants to know is, whether you had before you at the time you manufactured, the Cleveland design and copied it?

A. No, we didn't; didn't have it.

Q. *The knowledge of the Cleveland patent, then came to you after you had designed your machine?*

A. No. *I wouldn't say that; I wouldn't say that.* As I say, we might have seen some of their printed matter, but I never had seen one of their machines." (Ib. 40).

Sumner being shown the photograph identified as Defendants' Interrogatory Exhibit "A", and asked to compare the same with the model of the Cleveland machine, Plaintiff's Exhibit "10", (Trans. 285), said:

"The *only similarity* would be the straight bed that is, the straight bed here and this straight bed there. This (that is said Ex. A of Defts.) has two bearings in the bed, and that (the model Plffs. Ex. 10) has one. * * * This (said Defts. Ex. A) shows a straight bed-plate with two bearings instead of one, and a *trifle wider on the shaft end* than on the cylinder end, but running nearly parallel the two sides." (Trans. 41, 42).

Witness further stated:

"the upper end of the arm, either hook or push arm, would want to be direct in line with the center of

the cylinder, so as the piston rod would move back and forth there wouldn't be any cramping or bending of the piston rod." (Ib. 45).

Note that the cut of log turner manufactured by Sumner Iron Works as shown by their advertisement which appeared in "The Timberman" of August, 1920, on the inside page of the cover (See upper illustration reproduction of this advertisement Trans. p. 287) shows *all the elements constituting the patent combination*. The only difference between the bifurcated arms as made by Sumner Iron Works and previously shown in the advertisement of "The Timberman", Plaintiff's Exhibit 16, (Trans. 286) being a mere matter of degree. That is to say the curve in the shoulders of the bifurcate portion of the arms was made less abrupt as Sumner said. (Trans. 56).

"We have been gradually taking this crook out and bringing this up straighter here, to do away with breaking.

Q. That would be a forked arm, would it not?

A. *The bottom part has not been changed*, the part that is on the shaft, that is, in repairing the old-timers."

Slightly modifying the curve in the shoulders of the bifurcated arm as used in the Cleveland combination was apparently all the needed correction Mr. Sumner or his designers could find. He testified (Trans. 46) that if the sides of a forked arm would come up a little straighter it would be very strong.

Repeating his words:

“Q. *What would be the effect on the strength of the push-arm by bifurcating it at the end which is connected to the shaft?*

A. If this line here had been straight on each side for the same amount of metal, *it would develop greater strength.* We have found out, in the last two or three years' experience here is where we are having breakages.”

Sumner could not remember when the Silverton log turner was put in. (Ib. 63).

When asked whether he knew the principle of construction of the Cleveland patent when that log turner was built, he declined to answer:

“Q. When you built that Silverton log turner you had already seen advertising matter of the Cleveland patent here in suit?

A. I testified that I presumed I had seen the printed matter.

Q. And you knew the principles of construction there involved, didn't you?

A. *I wouldn't answer that. I wouldn't say whether I had or not.*

Q. You knew that it consisted of a straight bed, it had a straight bed; but you know the Cleveland patent had a straight bed?

A. I have answered that before. I said that I presumed that I had seen some of their printed matter, but I never had seen the Cleveland turner.

Q. Did the printed matter show that it had a straight bed?

A. Why, you have some of their printed matter. That would tell you whether it showed.

Q. Mr. Sumner, I am talking about the printed matter which you saw of the Cleveland patent.

A. I couldn't tell you all that, for the reason you are asking me to say things on the stand that happened back years ago. Now I told you I presume I had seen—

COURT—If you don't remember, say so.

A. I don't remember." (Ib. 64).

With regard to *the new drawings* made by the Sumner Iron Works, directly *after* the fire of 1913, Mr. Sumner said: (Ib. 68).

“ * * * These drawings *differed* from the drawings we previously had *in the shape of the bed*, and I presume *in the shape of the arm*. The old set of drawings showed the patterns which had been destroyed, they had a crooked bed. The new drawings had a straight bed. *The log turner turned out from the new drawings made after the fire had a straight bed and a structure very similar to that shown in Mr. Cleveland's patent here.*”

As late as the summer of 1923, thus more than a year after this suit had been brought, which was March 29, 1922, (Trans. p. 2), appellee Sumner Iron Works sold a log turner embodying the structure defined by claim 12 of the patent in suit to the Columbia River Paper Company at Vancouver, Washington. (Trans. 57). Photographs of the push-arm unit and the hook-arm unit of such log turner are shown by Plaintiff's Exhibits 14 and 15. '(See reproduction Supplement to Trans. pp. 2 and 3.)

Sumner explained to the Court (Trans. 57, 58) that they showed "bed-plate with one bearing and the push arm bifurcated."

The Vancouver contract did not require this particular type of log turner (Trans. 60), but appellee *Sumner Iron Works* furnished it because it believed it to be the best there is in the line of log turners. In other words, as Mr. Sumner said on cross-examination:

"Q. In furnishing this particular log turner for Vancouver, Washington, you *intended to give them the very best that you knew of*, as far as log turning outfit was concerned?

A. I presume that would be the argument of one of our salesmen." (Ib. 61).

The improvements suggested by Mr. Sumner with regard to reducing the curves at the shoulders of the bifurcated portion of the arm, (Trans. 56) is, it is submitted, merely a matter of choice and degree.

The Cleveland patented log turner as manufactured by Allis-Chalmers, a licensee of appellant, (Trans. 128) has very little curve at the shoulders of the arms as shown by Plaintiff's Exhibit 19, (Referred to in Trans. P. 81, 88, 129, and 143) and reproduced in Supplement to Trans. p. 4.)

This cut shows the unit of each of the arms as composed of the combination covered by claim 12, but the devices are mounted for exhibition purpose only.

The type of Cleveland patented log turner shown by Plaintiff's Exhibit 19 is that installed at the saw mill of Jones Lumber Company at Portland, Oregon. (Trans. 80, 81). In this log turner the bearing is provided at the end of the bedplate for the shaft, and the arm straddles the bearing the same as described in claim 12; but the push arm (A) is divided so that a "Hill Nigger" may be inserted up through the bearing. A Hill Nigger is a bar with teeth on it, and is used as a substitute for the arm to turn smaller sized logs on the carriage (p. 88). See testimony of witnesses Marler and Hines Trans. 129.

As explained by witness Demangeon (Trans. 143):

"It is becoming quite necessary in this country to use a Nigger in connection with the so-called Simonson-type log turner, for the reason that much smaller logs are being brought to the mills to be sawn than formerly; it is becoming desirable to have both machines for use at any time."—that is to say to use the push arm or the Hill Nigger as expedient.

The modification illustrated by said Plff.'s Ex. 19, which can so be made in the Cleveland push arm, is not material to the case at bar; but it shows that the particular combination covered by Claim 12 is adapted to allow for the incorporation in the Cleveland push arm unit of a so-called "Hill Nigger" or auxiliary device for turning smaller sized logs.

From Defendants' Exhibit 31 it is to be noted that appellee Sumner Iron Works adopted the Cleveland patented combination for its "*Standard straight-bed log turner*".

This exhibit is an advertising bulletin issued by appellee Sumner Iron Works and designated "Bulletin No. 4".

On the outer page of this bulletin appears a cut apparently identical with that shown by Plaintiff's Exhibit 17, (Trans. 287) thus showing a device which clearly infringes claim 12 of the Cleveland patent.

On the fourth page of this bulletin appears a cut of another log turner manufactured by appellee Sumner Iron Works which in this instance is arranged in a similar manner as the illustration of the Cleveland log turner on Page 85 of "The Timberman" of March, 1912, in the advertisement of Giddings & Lewis Manufacturing Company, who in 1912 were manufacturing the Cleveland log turner. See Plaintiff's Exhibit 16, Trans. 286, also at the end of this brief.

Reproduction of Page 85 of The Timberman
of March, 1912

PLAINTIFF'S EXHIBIT 16

MARCH, 1912

THE TIMBERMAN

85

 <p>HAZARD WIRE ROPE FOR EVERY PURPOSE</p> <p>HAZARD MANUFACTURING COMPANY WILKES-BARRE, PENNA. NEW YORK 50 DEY ST. PITTSBURGH 21 CONESTOGA BUILDING. CHICAGO 352-354 WEST ADAMS ST.</p> <p>MARSHALL-WELLS HARDWARE CO., Portland, Ore., Seattle, Wash., Spokane, Wash., Agents</p>	<p>HAZARD SPECIAL PLOWH STEEL WIRE ROPE "OLYMPIC BRAND" FOR LOGGING PURPOSES</p>
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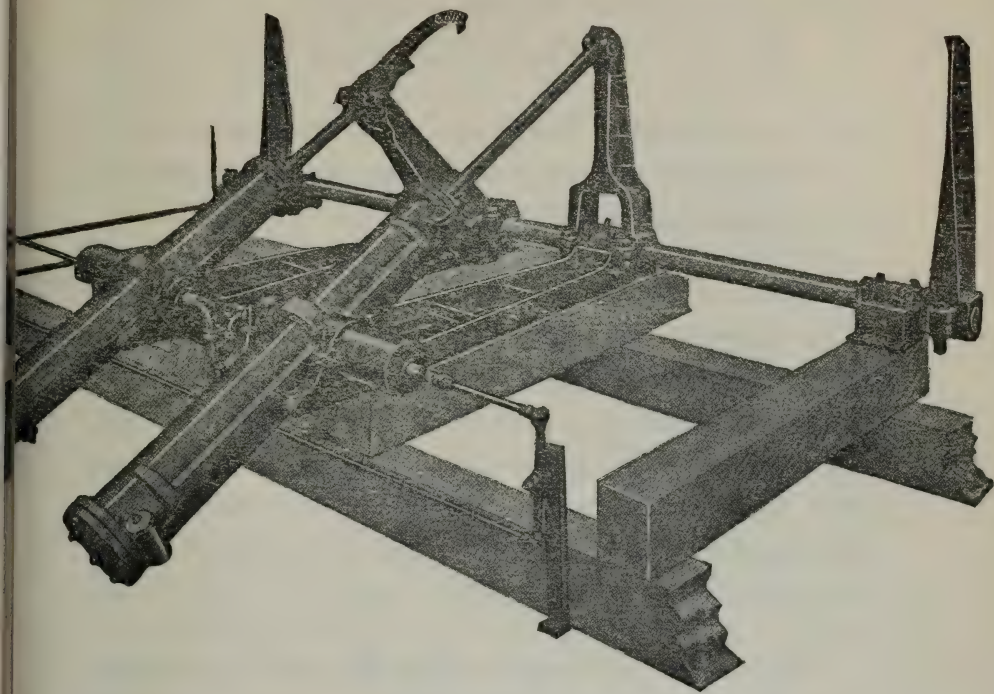


CLEVELAND'S IMPROVED
SIMONSON LOG TURNER
WITH INDEPENDENT STEAM SKID LIFT

No leaky trunnions, because valves are placed below the floor timbers.—Note the straight steel bed plates and forked hook and push arms.
If you are going to put in a Turner, better get the best and latest improved.

GIDDINGS & LEWIS MFG. CO.
FOND DU LAC, WISCONSIN

Reproduction of the cut shown on the fourth page of *Sumner Iron Works Bulletin No. 4*, constituting Defendants' Exhibit 31. (Trans. 153.)



"Sumner Standard Straight-Bed Log Turner".

The cut shown on the fourth page of said bulletin, Defendants' Exhibit 31, reproduced at p. 10 of Supplement to Transcript.

In the description under the last mentioned cut of this log-turner appears the following:

"BEDS. As the foundation of this machine, which we consider one of the most essential features, we have *adopted the straight line style of bed which we consider best in principle*, in practice and from an engineers' standpoint. This construction eliminates any tendency to produce twist-

ing strains on shaft or bearings which occur on the offset type of beds. The fact that *both beds are identically the same and are either handed* makes it easier to stock or obtain repairs in case of breakage, as *either bed can be used under either cylinder*.

“ARMS. The push and hook arms are made of electric cast steel and *designed to straddle the main shaft bearings on beds.*”

Thus, in short, it is submitted the record shows: That appellee Sumner Iron Works manufactured log turners embodying the Cleveland patented combination—*adopted* such construction as THE STANDARD construction of its log turners—because it considered that its salesmen could truly say of such construction *it is the best this appellee knew of*, as admitted by Mr. Sumner on the stand. (Trans. 61).

But the record further shows that only by copying said Cleveland patented structure, appellee Sumner Iron Works was put in position to compete with appellant and its licensees in the selling price of these log turners.

It is apparent from the record that appellees pinned their defense—of the prior art suggesting the Cleveland structure—on two devices:

FIRST: The *straight bed* idea which is exhibited by the photograph, Defendants' Interrogatory Exhibit "A" representing the push arm unit of the log turner seen by Mr. Sumner in 1906, in the Frazier River Mill,

in Canada, and also illustrated by the model constituting Defts'. Ex. 27.

SECOND: The *forked-arm* idea as shown for example in the Simonson patents No. 448,591 and No. 448,592, constituting Defts'. Exs. 8 and 9, which exhibits were introduced principally with regard to the construction of the hook arm E. An enlarged drawing of this arm was made by Plaintiff and such drawing was accepted and introduced by defendants as their Exhibit 29.

With regard to said first alleged device:

Mr. Sumner testified that this exhibit of defendants' differs from the old crooked type of bed plate in being made straight with two bearings for the shaft, and an arm—which arm for convenience is being designated a "T" arm—on the shaft between the bearings. (Trans. 44).

Mr. HINES said:

The T-arm would have to be made *heavier*. (Ib. 103). There would be *more of a chance for casting defects* as compared with the bed-plate of the Cleveland patented combination. (Ib. 97).

The latter was also confirmed by patentee Cleveland. (Ib. 165).

Mr. Hines further said that the structure represented by Defendants' Exhibit 27 *would cost more to*

make. (Ib. 98). It would require a larger flask for casting, and require more careful pouring and gating. (Ib. 106).

None of these differences in construction, in favor of the Cleveland patented device, were contradicted by appellees.

Mr. Hines also called particular attention to the fact that *the bed-plates for the push arm unit and the hook arm unit would not be alike.* (Ib. 107).

On the other hand *by the Cleveland patented structure said arm-units are alike, and may be used in, or substituted for either unit.*

Appellee Sumner Iron Works *extolled this particular feature and adopted it for its standard type of log turner as shown by Defendants' Exhibit 31, Trans. 153, and the cut thereof in Supplement to Trans. p. 10.*

Considering next appellees contention on *the bifurcated-arm idea:*

It will be noted that *the question was not whether a bifurcated arm cast in one piece was the equivalent of such an arm made up of several pieces; but whether the prior devices expressed the same idea and purpose as the Cleveland combination.*

MR. THOMAS, appellees' witness said:

That the arm E shown in the Simonson patents last referred to was in effect just the same as if an integral

casting; but added, while said arm E is mounted on the shaft of the log turner, the *devices of these Simonson patents do not include any bed-plate. The shaft is carried by brackets* mounted on the floor, and that is not the same as using a bed plate. (Trans. 75, 76).

MR. HINES said, referring to said arm E of said Simonson patents—"This arm is made double to provide a pocket for the hook F, but the push arm shown in this patent No. 448,592 (Defendants' Exhibit 9) *goes back again to a single arm with no bifurcations, lateral bracing or anything of that kind.*" (Trans. 107) and having reference to the drawing made by plaintiff of this arm E (Defendants' Exhibit 29) Mr. Hines said:

"I would *not* consider that construction as efficient as the Cleveland bifurcated arm, because *the Cleveland arm straddles the bearing.* There is a great deal of *mutual support*, and there is *a great deal more strength in the Cleveland arm*, for lateral strength, and I think lateral strength myself is important in this work, from my own observation." (Trans. 108).

MR. HANSON, called by plaintiff, said:

"That Defendants' Exhibit 27 as amplified by Defendants' Exhibit 28, 'would be a *clumsy affair all spread out*, not symetrical'. He would redesign the push arm of the last mentioned Exhibits Exhibit 22. (Trans. 135, and see cut Supplement to Trans. p. 5.)

MR. DEMANGEON on behalf of appellant, said:

“The arm marked E, * * * is two arms instead of one arm joined together by a spacing piece by means of bolts or rivets I judge by the picture, and *is an entirely different appliance.*”

MR. CLEVELAND pointed out that the Arm E of said Simonson patents is “*perfectly straight, from the shaft upward*, whereas, the arm shown in the Cleveland patent in suit, and marked 39, is an integral casting, having *a fork lower end for attaching to the shaft.*” (Trans. 163).

The file wrapper of the Cleveland patent is unimportant and therefore was not reproduced as an Exhibit.

It cites no references. The combination in issue is conceded by appellees to be original with Cleveland. Appellees’ defense is that the combination of the elements stated by said claim 12 did not involve invention; therefore anyone had a right to appropriate that combination.

Judge Bean held said claim 12 invalid.

He said—“the use of a push arm in a log turning device, bifurcated and straddling the bearing formed upon the outer end of the bed plate is not sufficient in my opinion, in view of the prior art, to constitute invention and subject to patent.”

The Court stated in support of its finding that some sort of bifurcated arm is shown by EE in said Simon-

son patents constituting Defendants' Exhibits 8 and 9. Therefore, the Court thought, it "did not involve invention * * * for Cleveland to use an arm divided or forked at the lower end."

The Court cited in support of its position the case of Gilchrist vs. Mallory; (381 Fed. 350), but this case merely states the well established rule that ordinarily it does not involve invention to cast in one piece what formerly was made up of several pieces fastened together. That fact was, however, wholly immaterial.

But it is to be noted, in this connection, that—as explained by Mr. Thomas—appellees' expert witness (Trans. 75, 77)—the construction of the arms E E shown in said Simonson patents is wholly different from the arm comprised in the combination in issue. Those patents showed no bed plate at all. While in Claim 12 *a bed plate*—and besides one of *specific* construction, *is an element* of the combination, and the Cleveland arm was especially adapted to cooperate with his bed-plate. The construction so produced was *new* as Mr. Sumner himself conceded. (Trans. 41); and after the fire Mr. Sumner's company made new drawings and new patterns for "*a structure very similar to that shown in Mr. Cleveland's patent here.*" (Trans. 68)—in fact, *identical* therewith.

The question therefore arose: *Is the association of several devices, into one operative whole, invention:*

When the prior art does not show any similar combination having the same purpose and producing the same beneficial results:

When the infringer deliberately adopted this combination with *knowledge* of a patent having been granted for it; discarding by choice other devices which were open to his use:

When the infringer himself *extolled* the virtue of this combination in the circulars issued to the trade, calling attention to the very features which he *copied* from the infringed patent.

Thereupon a decree was entered by appellees in said District Court adjudging said claim 12 of said Cleveland patent void, and dismissing the bill of complaint herein. (Trans. 168).

Thereupon appellant took and perfected its appeal to this court in due form (Trans. 168, 173), asserting in its assignment of errors that said decree is "erroneous and unjust":—

I.

"Because the District Court adjudged and decreed that the improvement described and claimed in claim twelve in the letters patent of the United States granted to Charles E. Cleveland, September 7, 1909, No. 933,231, for an improvement in Log Handling Mechanism, assigned to plaintiff and sued on herein, did not involve invention and that said claim is void.

II.

"Because the District Court failed and refused to adjudge and decree that said Charles E. Cleve-

land invented a new, useful and patentable improvement in Log Turning Mechanism duly defined and claimed in said twelfth claim of said letters patent.

III.

“Because the District Court erred in not adjudging and decreeing that said claim of said letters patent is valid, that the defendant infringed the same, and that the plaintiff as the assignee of said letters patent is entitled to relief from such infringement as prayed for in the bill herein.

IV.

“Because the said decree of the District Court is in prejudice of the substantial rights and equities of the plaintiff in the premises.”

Argument and Points of Law

Appellee Silverton Lumber Company is a mere spectator, as it were. It took no active part in the controversy beyond setting up the same defense as pleaded by Appellee Sumner Iron Works, and undoubtedly at the latter's request.

In order to keep conveniently before the Court an outline of the alleged anticipating devices and the problem which Cleveland had to solve when he entered the field, appellant has placed at the end of this brief a diagram illustrating, by comparison, the differences between the Cleveland patented log-turner described by

Claim 12, and the devices which appellees contend suggested the invention.

Identity between log turner appellee manufactured and the patented structure is admitted. (Trans. 14.)

The alleged anticipation of the patented combination appellee sought to establish by synthesis.

The combination in issue resulted not from a mere selection and assembly of old parts.

Neither Cleveland's bed plate, tapered towards the front end, and provided there with a single bearing, nor the bifurcated arms mounted thereon as described in said Claim 12 existed prior to the Cleveland invention but had to be created by him for the special purpose he had in mind.

The old so-called Simonson crooked-bed log turner had been found wholly unsatisfactory. It did not stand up under the heavy work of the Pacific Coast.

Sumner saw in 1906 the so-called Frazer River straight-bed type of log-turner represented by Defendants' Int. Ex. A and the model thereof, Defendants' Ex. 27. But that did not prove satisfactory. (Trans. 44.)

The fire occurred in appellee's shop seven years later, in 1913.

Appellee had the same opportunity for observation and experiment as Cleveland had. Indeed, more so, because as Sumner said (Trans. 32) *his company was*

fortunately situated for observation. Nevertheless, Appellee did not claim to have produced any improvement on the old Simonson type of log turner during the seven years between 1906 and 1913. When the fire gave the opportunity for changing from the old Simonson type to a better log turner, Sumner's company adopted a construction identical with the Cleveland patented log turner. Sumner had seen advertisements of this. (Trans. 40, 64.) Note the advertisement (Trans. 286) in *The Timberman* of March, 1912, a year before the fire. Sumner's company was a subscriber to *The Timberman*. (Trans. 70.)

It is submitted the Cleveland improvement must have been something not obvious, although needed to make the old log turner a success.

To design and test out by experimentation conceived improvements, in order to demonstrate their utility, requires enterprise and expenditure of money. Cleveland had that burden imposed upon him. Would it not be unjust to Cleveland, he having assumed such burden, now to let a rival manufacturer take the fruits of his enterprise from him?

That the Cleveland improvement is a success is confirmed by appellee's own acts. Appellee not only adopted the Cleveland structure but made that its "STANDARD straight-bed log turner" as shown by Defendants' Exhibit 31, being its "Bulletin No. 4" or circular issued to the trade. (Trans. 123; see reproduction Supplement to Trans. p. 8.)

Sumner's company further confirmed its choice of the Cleveland improvement in The Timberman of August, 1921, which was a device identical with the Cleveland patented combination. (See Plaintiff's Ex. 17, Trans. 71 and 287.)

Sumner's company again confirmed its choice when in 1923—after this suit had been instituted—it installed an infringing log turner at Vancouver, Washington, which, according to Mr. Sumner's admission, probably was *represented by appellee's salesmen to be the best to be had.* (Trans. 61.)

Sumner's company had made no improvements in its "STANDARD" Cleveland type of log turner to the date of the trial. Its changes were merely to straighten out curves in the shoulders in the bifurcations of the arms; changes merely of degree, the work of mechanics of the shop, in no wise affecting the principle involved in the Cleveland structure.

THE BENEFITS OBTAINED BY THE CLEVELAND STRUCTURE WERE:

A small bed-plate tapering towards the front end, well designed for casting, therefore, involving less chance of imperfect casting, requiring less metal and less machine work. The tapering front end of the bed plate was provided with a single bearing, and *this bed-plate answers for both arm units.*

“It is always considered desirable to have the bed plates alike, * * * it is much easier to manufacture two things alike than two different.”

(Mr. Hines: Trans. 107.)

In the so-called Frazer River device, Defendants' Int. Ex. A and Ex. 27, the bed-plates were not the same, but there was one bed-plate for the push-arm unit and another for the hook-arm unit. (Trans. 107.)

Sumner's company in its said Bulletin No. 4, Defendants' Ex. 31, emphasized the features of the Cleveland patented improvement. It said on the fourth and fifth pages of said bulletin, as already mentioned:

“BEDS. * * * *The fact that both beds are identically the same and are either handed makes it easier to stock or obtain repairs in case of breakage as either bed can be used under either cylinder.*
* * * * *

“ARMS. The push and hook arms are * * * *and designed to straddle the main shaft bearing on the beds.* * * *

The Cleveland patented improvement effected a saving of about \$50.00 per arm unit, thus \$100.00 per log turner, which in itself was sufficient to throw the scale on competitive bids. (Trans. 96, 99.) This fact was not denied by Sumner.

The virtues and advantages of the Cleveland structure are summed up by Mr. Hines:

“It certainly fills exactly what you wish to do with a machine of this kind and at a minimum of weight and material. *The elements making up the device all mutually support each other.*”

(Trans. 109.)

And by Mr. Demangeon:

“The purpose intended to be accomplished is accomplished in a simple, inexpensive and thoroughly satisfactory manner by the Cleveland design, and accomplished in a manner that I consider new and novel.” (Ib. 141.)

“In my judgment the Cleveland type accomplishes the object desired in the best possible manner, that is, there is *the greatest strength obtained at minimum cost*; the arrangement is such that it occupies the least possible space, and *all strains are taken care of* in the most direct and simple manner; any other method known at the present time would cost more to manufacture.” (Ib. 138.)

Sumner's company even knowingly risked threatened law suit, when it adopted and continued to manufacture the Cleveland patented improvement. (Trans. 39.)

Appellee defends its action by contending that said improvements did not require invention, which is an assertion that they were obvious to any skilled mechanic.

If so, why were said greatly needed improvements not made before Cleveland conceived and made them?

Why were they not gotten up in the shop of Sumner Iron Works?

A careful analysis of Sumner's testimony shows a man, of ample practical knowledge and experience with ample facilities for experiment at his command, yet unable to make a log turner by himself or associated talent as acceptable as the Cleveland patented device.

WHAT CONSTITUTES INVENTION.

As aptly stated by the Court in *McMillin Company vs. Androscogging Pulp Company* (291 Fed. 134, 137):

“Courts have not found it an easy task to decide questions of patentable novelty.”

And the Court pointed out the difficulty of determining when a case is within the reasoning of *Loom Company vs. Higgins*, 105 U. S. 582; 26 L. Ed. 1177, or *Atlantic Works vs. Brady*, 107 U. S. 200; 27 L. Ed. 438.

The Court also referred to the case of *N. J. Zinc Co. vs. Am. Zinc Co.*, 276 Fed. 733, 738, in which it is said:

“No Court has ever been able to formulate a test by which a satisfactory line can be drawn between the products of the inventors' intuition and the results of mechanical skill. That question must always be left for determination to the careful exercise of the judgment guided by the established rules of law.”

Among the established rules of law is, as well known, *the presumption of validity which attaches to a patent*. This presumption is disputable, of course. Nevertheless, "In this mode the law defines the nature, and the amount of evidence which it deems sufficient * * * to throw the burden of proof on the other party." (Greenleaf on Evid., Vol. 1, Sec. 33.)

No patent is issued without the examination at the Patent Office by an Examiner, skilled on the subject. And it is presumed that he has performed his duty. (Union Sugar Refinery Co. vs. Matthiesen, 24 Fed. Cas. 686, 688.)

In Cook vs. Ernest, 6 Fed. Cas. 389, the Court said that the decision of the Commissioner of Patents on the question of novelty "is a determination entitled to the highest respect of the Court and should not be reversed except upon the most satisfactory proof."

In Smith et al. vs. Woodruff (22 Fed. Cas. 703), the Court said: "The Court is greatly relieved, and will be so all the way up to the Court of last resort, by presumptions in favor of the finding by the (Patent) Office, to which is entrusted the determination of question of patents."

In Untermeyer vs. Freund (37 Fed. Rep. 343) the Court being in doubt, said:

"To state the proposition as fairly as the defendants can expect, the issue upon this branch of the case is involved in uncertainty. If the defendants' right to recover a sum of money in an ordi-

nary action at law depended upon their establishing the affirmative of this issue, a verdict in their favor would, probably not be disturbed by the Court. *If, however, the complainant's conviction of a crime depended upon the establishment by the prosecution of the same proposition, a verdict of guilty could hardly be sustained.*" The patent in question was sustained.

See, also, Walker on Patents, Sec. 76. And, in Cluett, et al, vs. Claflin, et al. (30 Fed. Rep. 922) the Court said:

"A voluminous mass of testimony has been returned upon the question of prior use. The greater part, however, may be laid aside, when it is remembered that this defense must be established by proof as explicit and convincing as that required to convict a person charged with crime; proof which *preponderates* the complainant's testimony *not only*, but which *satisfied the mind beyond a reasonable doubt.*"

There is another very potent reason for extending to patents for inventions the full effect of the presumption in its favor as above laid down.

Our patent system is based upon a *desire to reward those who have a progressive spirit, and devote their energy to improving the conditions of things.* The advance made by an inventor must, however, be relatively considered. All inventions are efforts to satisfy some want which is preceived to exist.

“The want may not have been apparent until some previous efforts, partially or imperfectly satisfying the more universal want, disclosed the subordinate and narrower need. Every successive improvement substitutes a better condition of affairs; and at the same time brings to light imperfections still to be overcome. As the end has become narrower and more special, the scope of the means devised to meet it necessarily becomes correspondingly contracted. Yet it is evident the narrowest and most technical invention which is devised to fill such special want is also entitled to protection.”
(1 Robinson on Patents, Sec. 88, Note 2, p. 134.)

Hence, the law “has no nice standard by which to gauge the degree of mental power or inventive genius brought into play in originating the new device. A lucky, casual thought involving a comparatively trifling change often produced decided and useful results, and though it be the fruit of a very small amount of inventive skill, the patent law extends to it the same protection as if it had been brought forth after a lifetime devoted to the profoundest thought and most ingenious experiments to attain it.” (Middleton Tool Co. vs. Judd, 17 Fed. Cases, 278; Robinson on Patents, Vol. 1, Sec. 83.)

The magnitude of the result achieved merely concerns the recompense of the invention.

The test of the inventive act is not its apparent simplicity after having been disclosed, but the prior ab-

sence of the means or end attained, though evidently desirable.

In *Hoe vs. Cottrell* (1 Fed. Rep. 597, 602), Shipman J., said:

“In the determination of the question whether there was invention in any particular combination, the important thing is to ascertain whether novelty and utility existed. It is true that these requisites may result from mere mechanical skill, and a new and useful combination may be formed by the mere mechanical addition to an old member to an old set of members; *but, when a device has a new mode of operation which accomplishes beneficial results, ‘Courts look with favor upon it,’ and are not exacting as to the degree of inventive skill which was required to produce the new result.*”

In *Pearl vs. Ocean Mills*, 19 Fed. Cases, pp. 56, 59, it is said:

“No more difficult task is imposed upon the Court in patent causes than that of determining what constitutes invention, and of drawing the line of distinction between the work of the inventor and the constructor. The change from the old structure to the new may be one, which one inventor would devise with the expenditure of but little thought and labor, and others would fail to accomplish after long and patient effort. It may be one which one whose mind is fertile in invention will suggest almost instantaneously, when the skilled

hand of the constructor will fail to reach the apparently simple result by the long and toilsome process of experiment.”

Hence, now we can see clearly the wholesomeness of the rule of law above referred to, and which is so well stated in the case of Kirby vs. Beardsley, 14 Fed. Cases, p. 660:

“This difficulty (distinguishing between invention and construction) in connection with the general merit of inventors, as contributors to the material interest of society has inclined Courts to give a *liberal construction to the law, so as to protect every contrivance that can be called new, that proves at all useful. Care has been taken to give the benefit of doubt, as to originality, or creative thought to the inventor, so as to nourish inventive enterprise by lending encouragement to every degree of merit.*”

And, to give this beneficial rule of law its full effect, Courts will not allow the presumption of law in favor of patents for inventions to be overcome by proof of the alleged anticipating thing founded on *speculation*. The law will not be satisfied with conjecture, but *demand*s *certainty*. (Coffin vs. Ogden, 18 Wall. 124.)

A similar proposition as here involved was before the United States Supreme Court, in Loom Co. vs. Higgins (105 U. S. 591). The Court said:

“It is further argued * * * that * * * the devices * * * do not show any invention * * *

that the combination set forth is a mere aggregation of old devices well known, and, therefore, it is not patentable. This argument would be sound if the combination claimed by Webster was an obvious one for attaining the advantages proposed—one which would occur to any mechanic skilled in the art. But it is plain from the evidence, and from the very fact that it was no sooner adopted and used, that it did not for years occur in this light to even the most skilled persons. It may have been under their very eyes—they may almost be said to have stumbled over it; but they certainly failed to see it, to estimate its value, and to bring it into notice. * * * Now that (the combination) has succeeded, it may be very plain to any one that he could have done it as well. This often is the case with inventions of the greatest merit. It may be laid down as a general rule * * * that if a new combination and arrangement of known elements produce *a new and beneficial result*, never attained before, it is evidence of invention.”

The doctrine of the foregoing cases is well known to this Court. These cases are merely cited for convenient reference. Nevertheless they state what may be termed to be one of the fixed rules of law applied to a patented device in question when it shows a new and beneficial result.

The same question was most elaborately discussed quite recently by the Court of Appeals of the Second Circuit.

In *Kurtz vs. Belle Hat Lining Co.*, 280 Fed. 277, 279, involving the Hat Lining Patent, 1,216,140, February 13, 1917, which had been held to display nothing patentable in the District Court, the C. C. A. 2nd on reversing the lower decree said—after stating the facts: (Hough C. J.)

“Thus is presented the question of invention, admittedly one of fact, yet also one as to which courts, composed of lawyers, have long been anxious to act with uniformity and along lines of thought which will result in precedents, instead of mere incidents. Despite the warning of Justice Brown in *McClain vs. Ortmyer*, 141 U. S. 419, 427, 12 Sup. Ct. 76, 35 L. Ed. 800, that the word ‘invention’ ‘cannot be defined in such manner as to afford any substantial aid in determining whether a particular device involved an exercise of the inventive faculty or not’ the effort still continues. Prof. Robinson analysed all of these attempts down to his date of publication (1890), which was but a few months before Brown, J., pronounced the effort futile. *Rob. Pat. Vol. 1*, p. 116 et seq. Yet there remains as always worthy of consideration the learned author’s dictum that the mental faculties involved in the inventive act are the creative and not the imitative.’ Section 78. In comparative late years efforts at positive statement have been limited to such generalizations as that:

“Invention, in the nature of improvements, is the double mental act of discerning, in existing machine, or processes or articles, some deficiency, and pointing out the means of overcoming it.” *General Electric vs. Sangamo*, 174 Fed. 246, 251, 98 C. C. A. 154, 159.

“What may be called negative definitions or partial descriptions are still and always have been very common. Thus:

“Every result obtained by deliberate reflection and experimentation with well known appliances, or parts thereof, is not necessarily invention within the * * * patent laws.” Lord vs. Payne (C. C.) 190 Fed. 172.

“Invention involves conception of at least some function, as well as the selection of the means whereby that function can be operatively secured.” U. S. Co. vs. Hewitt, 236 Fed. 729, 150 C. C. A. 71.

“If * * * the mind advances from the known to the unknown by a transition natural to the ordinary instructed intellect, there is no invention.” Farnham vs. U. S., 47 Ct. Cl. 207.

Again a certain device was invention because—

“It was true discovery. It involved uncovering a thing which, while long capable of being done, was never before thought of. It also afforded a medium or means for bringing the discovery into practical action, and put it into the hands of others, there to be turned to pleasurable and profitable uses.” Cunningham vs. Aeolian, 255 Fed. 897, 900, 167 C. C. A. 217, 220.

“The enormous multiplication of improvement patents has produced such sayings as:

“It often requires as *acute a perception of the relation between cause and effect*, and as much of the peculiar intuitive genius which is characteristic of great inventors, to *grasp* the idea that a device used in one art

may be made available in another, as would be necessary to create the device de novo. And this is not the less true if, after the thing has been done, it appears to the ordinary mind so simple as to excite wonder that it was not thought of before.” Potts v. Creager, 155 U. S. 597, 608, 15 Sup. Ct. 194, 198 (39 L. Ed. 275).

“It has even been thought necessary of late to dwell upon the presumption; that a given device—

“certainly (was) not in an exact repetition of the prior art. *It attained an end not attained by anything in the prior art.* * * * it possess such amount of change from the prior art as to have received the approval of the Patent Office, and is entitled to the presumption of invention which attaches to a patent, *its simplicity should not blind us as to its character;* * * * *knowledge after the event is always easy*, and problems once solved present no difficulties, indeed, may be represented as never having had any, and expert witnesses may be brought forward to show that the new thing * * * was always ready at hand and easy to be seen by a merely skillful attention. *But the law has other tests of the invention than subtle conjectures of what might have been seen and yet was not.* It regards a change as evidence of novelty, the acceptance and utility of change as a further evidence, even as demonstration.” Dimond, etc., Co. vs. Consolidated, 220 U. S. 428, 434, 31 Sup. Ct. 444, 447 (55 L. Ed. 527).

“The foregoing quotations which might be multiplied, only prove the truth of Justice Brown’s dictum, and enforce the other truth which we attempted to

point out in *Kimball vs. Noesting* (C. C. A.), 262 Fed. 148, viz.: that invention is a question to be decided on the evidence. The problem is the more difficult because evidence as to invention does not often give rise to conflicts of fact in the ordinary sense of that phrase; it does, however, give rise to acute differences of opinion as to the inferences to be drawn from facts in themselves uncontradicted; and this is as true of what is called 'opinion evidence' as it is of testimony regarding things visible or tangible. It is probably for this reason that experience has dictated *some canons of decision* (they are not rules of law) as to how the problem of invention is to be approached.

"Thus it has been well said that "in determining this question it is proper to bear in mind *the condition of the trade as well as the art to which the patent in suit is allied.*" *Warrent, etc. Co. vs. Am. etc. Co.* (C. C.), 133 Fed. 304, 306. And similarly that the "*effort (of the court) must always be to view the subject matter from the standpoint of the art concerned.*" *Kurtz vs. Blatt* (D. C.), 263 Fed. 392, 394. It is also the duty of the Court to construe patents *liberally*, so as to effect their real intent. *Bossert vs. Pratt*, 179 Fed. 385, 397, 103 C. C. A. 45. And cf. *Auto Vacuum Co. vs. Sexton*, 239 Fed. 898, 153 C. C. A. 26.

"Yet, when all has been done, the question of invention may 'be answered differently by persons of equal intelligence.' *Bossert vs. Pratt*, *supra*, 179 Fed. 386, 103, C. C. A. 46. We think, also, courts have always endeavored to observe at least some of Prof. Rob-

inson's guiding rules (*supra*), as that the nature of an invention is usually ascertained from examining the inventive act from which patented matter results; for invention always generates a new idea, although a patentee must create the means, and not merely perceive the end.

“Result is that study of well considered decisions under this head will always show that result is reached very largely from examination of *‘the results obtained.’* Doble vs. Pelton, etc. Co. (C. C.) 186 Fed. 526 (S. C. 190 Fed. 760, C. C. A. 9th). *Results are described by abstract nouns, like ‘simplicity,’ ‘Economy,’ etc., and, while it is always admitted and stated that the mere attainment of such desirable results is not invention, they always have been and must be used as evidence or indicia of invention, and the weight and probative effect of such remarks of excellence have varied, and always must vary within limits according to the personal equation of the fact trier.*

“*Thus, while neither simplicity, cheapness, nor utility—nor all three combined—constitute invention, they have been deemed most potent evidence thereof.* Barry vs. Harpoon Co., 209 Fed. 207, 126 C. C. A. 301. *Simplifying form and cheapening cost have been accorded the same potency (Hunt vs. Milwaukee, etc. Co., 148 Fed. 220, 78 C. C. A. 116) although, of course, such excellence must always be accompanied by a ‘different result’ (Bernz vs. Schaefer (D. C.), 205 Fed. 49, 52). Indeed, it has been thought that simplicity alone, though ‘cited as evidence of lack of invention, to our minds shows a high order of novelty and invention’ (Con-*

solidated, etc., Co. vs. Window Glass Co. (C. C. A.), 261 Fed. 362, 375), and to the same point Hills vs. Hamilton Co. (D. C.), 248 Fed. 499.

“Utility, though itself not invention, nor conclusive evidence thereof, *has been practically accorded the greatest weight*. Union, etc. Co. vs. Peters, 125 Fed. 601, 60 C. C. A. 337; Woerheide vs. Johns-Manville, 220 Fed. 674, 136 C. C. A. 316. Cf. Greenwald vs. LaVogue, 226 Fed. 448, 141, C. C. A. 278. Novelty, likewise, has been pushed to the front as a piece of evidence. Concrete, etc. Co. vs. Meinken (C. C. A.), 262 Fed. 958, 965.

“The imitation of a thing patented by a defendant, who denies invention, has often been regarded, perhaps especially in this circuit, as conclusive evidence of what the defendant thinks of the patent, and persuasive of what the rest of the world ought to think. David vs. Harris, 206 Fed. 902, 904, 124 C. C. A. 477; Smith vs. Peck (C. C. A.), 262 Fed. 415, 417. Commercial success has been too recently and too often considered to justify much citation, but, however unsafe as a guide (Boston, etc. Co. vs. Automatic (C. C. A.), 276 Fed. 910), it has always been a powerful piece of evidence, *especially when the prior art shows no success along the same lines* (David vs. Harris, *supra*).

“The list of laudatory epithets descriptive of what is considered evidence is by no means exhausted; the ‘marked superiority of the article’ constructed under the patent (Frost vs. Cohn, 119 Fed. 505, 56 C. C. A. 185); ‘a marked improvement in product’ (Greenwald

vs. Enochs, 183 Fed. 583, 106 C. C. A. 351); the 'ingenuity and popularity' of the patentee's product (Fligel vs. Sears, 254 Fed. 698, 166 C. C. A. 196); The 'unchallenged supremacy' of the same (Consolidated, etc. Co. vs. Firestone, etc. Co., 151 Fed. 237, 80 C. C. A. 589); and even the aid given by the patented article in 'advertising and identifying' an entirely different product (Fonseca vs. Suarez, 232 Fed. 155, 156, 145 C. C. A. 347—have all been used and we think properly so, as evidence of invention.

"Patentability has often been found *'in discovering what is the difficulty with an existing structure' and correcting the same, even though 'the means' are old, and their mere' adaption to the new purposes involves no patentable novelty.'* Miehle, etc. Co. vs. Whitlock, 223 Fed. 647, 650, 139 C. C. A. 201. *Hindsight, or wisdom after the fact, has always been looked upon with disfavor; e. g., Faries Co. vs. Brown, 121 Fed. 547, 550, 57 C. C. A. 609.*

"If we viewed this hat lining, or any hat lining, in the light of our own experience, it would appear trivial and unworthy the dignity of patent protection; but, looking at it through the evidence and (we hope) *with the eyes of the hat lining trade*, this patent represents a large and successful business. It is in the minds of all those who deal in hat linings, of the utmost importance. No one ever made a lining of such *simplicity, cheapness, and general adaptability* as has Kurtz and he has done it by mechanical means of winning simplicity, *to all of which defendant has testified by de-*

liberately imitating Kurtz's product and engaging in expensive litigation to defend the imitation.

“We are of the opinion upon this record that Kurtz's hat lining is novel, useful and displays patentable invention.”

Decree reversed, with costs.

As further instances that the courts recognize and abide by said canons the following cases are in point:

In Ottumwa vs. Christy Co., 215 Fed. 362, 369 (C. A. 8th) the Court said:

“It constitutes no anticipation and no defense to a claim of infringement that one or more elements of a patented combination or one or more parts of a patented improvement, may be found in one old patent or publication, and others in another, and still others in a third. It is indispensable that *all* of them, or their mechanical equivalents be found in the *same* description or machine, where they do substantially the *same work*, by *the same means*.”

In Imhauser vs. Bueck, 101 U. S. 647, 660; 25 Law. Ed. 945-947, the Supreme Court said:

“It is not pretended that any one of them embodies the *entire* invention secured to the complaint in his letters patent, * * * but it is insisted that each contains *some* features, devise or partial mode of operation corresponding in that particular to the corresponding feature, device or *partial* mode of

operation exhibited in the complainant's patent. Suppose that is so, still it is clear that such a concession cannot benefit the respondent, it being conceded that *neither of the exhibits given in evidence embodies the complainant's invention (i. e., the whole invention) or the substance of the apparatus described and claimed in his specification.*"

"The utility of the change, as ascertained by its consequence, is the real practical test of the sufficiency of an invention."

Smith vs. Goodyear Dental Vul. Co., 93 U. S. 486-495; 23 Law. Ed. 952.

In Warren Steam Pump Company vs. Black & Knowles Steam Pump Works, 163 Fed. 263, 280 (1st Cir. 1908), the Court said:

"In an art so highly advanced as the pump art, where all the elements which enter into the construction of a pump may be said to be old, where most conceivable conditions of use have been presented to engineers, and where the art exhibits the greatest variety of form and structure, it is impossible in many cases, as an abstract proposition, to draw the line between invention and the skill of the designer. There is, however, strong evidence of invention where 'we have presented the circumstances such as exist with respect to the patents, in suit, namely, a *demand for a more efficient air pump, the failure to previous efforts to meet this demand, the immediate success of the patented device, and its great utility.*'"

In Kalamazoo Ry. Supply Co. vs. Duff Mfg. Co., 113 Fed. 264; (6th Cir.), and in Kinloch Tel. Co. et. al. vs. Western Electric Co., 113 Fed. 659, 665 (8th Cir.), the Court held that:

When the question of patentable novelty is fairly open to doubt the practical success of the device and the fact that it *displaced similar devices*, is sufficient to turn the scale in favor of the invention.

The deliberate *choice* of a patented device over other known devices is the basis of *the evidential value of "extensive use"* as a factor in determining any doubt as to the invention in favor of patentee.

The defendant's use of a patented device has been regarded time and again as amounting to a *quasi estoppel*, with respect to denial of patentable novelty. T. H. Symington Co. vs. Miner, 216, Fed. 198.

The infringement by defendant is evidence that there must be something worth while to infringe: something which defendant must appropriate in order to present to the public what is demanded.

In Diamond Rubber Co. of New York vs. Consolidated Rubber Tire Co. and Rubber Tire Wheel Co., 1911, 220 U. S. 428; 55 L. Ed. 527, the Supreme Court held (p. 442) that the fact that defendant copies the device disclosed and claimed in complainant's patent, *particularly where the patent was a very restricted one*

and easy to evade is very strong evidence that it is substantially different from the devices of the prior art (p. 442) “and we may say, in passing, the elements of a combination may be all old. In making a combination the inventor has the whole field of mechanics to draw from”.

In *Coffield Motor Washer Co., vs. Howe Mach. Co.*, 190 Fed. 42, the Court said (citing a number of cases) :

“The utility of a patented device may be attested by the litigation over it.”

In *American Caramel Co. vs. Glen Rock Stamping Co.*, 201 Fed 363, the Court held that the *infringement of an improvement patent is a practical admission of the utility and novelty of the patented improvement.*

In *Hobbs vs. Beach*, 180 U. S. 383, 393, (45 Law Ed. 586), the Court remarked that invention rather consists in *the idea* that the change could be made than in making the necessary mechanical changes.

In *Neill vs. Kinney*, 239 Fed. 309, 313, (C. C. A. 3d) the Appellate Court in reversing the lower Court held:

That in looking for invention in a combination of old elements the Court is guided by the new and useful means which the combination may afford, or the new and useful results which may be obtained from it. Where a number of old elements each performs very much its old function, but *collectively* they produce *new and better results invention is involved in associating them together.*

The patent there reviewed was a derrick. The Court said, (p. 314) :

While the derrick of the patent, in view of its position in the art, is not * * * a great invention, yet *it has in combination* in a novel and useful way the qualities of *simplicity*, portability, *durability* and *economy*. We are, of course, aware that a mere summation of points of merit does not constitute invention any more than a mere aggregation of elements. Yet *their presence in a marked increased measure cannot be overlooked* in estimating the utility of a device and in determining whether it produces new and useful results within the principles upon which patents are granted.

The bifurcated arm idea is not an abstract element in the combination here in issue.

In Southern Textile Machinery Co. vs. Fay Stocking Co., 269 Fed. 243 (C. C. A. 6th Cir.), the Court said that:

An improvement cannot properly be said to be in one element alone, and hence not rightly protected by a claim for a combination, when the *change in the element required corresponding changes in the form and adjustment of co-operating parts to unite in producing the desired results.*

And see in Ohio Rake Co. vs. Bucher & Gibbs Plow Co., 266 Fed. 393, 394, (C. C. A. 6th).

General Electric Co. vs. Wagner Electric Co. et al., 130 Fed. 772 (C. C. A. 2d).

Where complainant's device is adapted to attain the objects stated in his patent and practical results are secured thereby, and the devices of the prior art are impracticable and insufficient to secure complainant's results, and *defendant bodily appropriates complainant's construction*, such facts are *most persuasive* upon the question of invention.

"We have been unable to find in the prior art any single device, or any *sufficiently definite* suggestions derivable from the various devices, which sustain the contention of defendants that the patented improvement is merely the result of mechanical skill. The reasons for the conclusion that the patented device involved invention sufficiently appear from a comparison of its construction, adapted to attain the objects stated in the specification and the practical results thereby secured, with the impracticability or insufficiency of the devices of the prior art. *The failure of defendants to avail themselves of said earlier devices or improve them, and their bodily appropriation of the patented construction, is most persuasive upon the question of invention.*"

Sanders vs. Hancock, 128 Fed. 424 (C. C. A. 6th)

Where a series of improvements has culminated in one which contributes decisively to the utility of a machine which others have been long trying to make operative, there is displayed more than the insight of a workman skilled in the art.

A court, having regard to the presumption of validity arising from the grant of a patent, the success which it has attained, the *non-existence of any complete anticipation*, and *the adoption of it by the defendant in his business with express notice of the patent and with a view to profit by it*, may hold a combination claim of narrow novelty valid.

The appellees made some attempt to belittle the Cleveland structure, pretending they found it necessary to cease using it—although they put in an identical and infringing structure in 1923 at Vancouver, Wash. If the appellee Sumner Iron Works had only in good faith lived up to such claim, it would not now be required to defend its acts. As it is, the remarks of the Supreme Court, speaking through Chief Justice Taft in *Eibel Process Company vs. Minnesota & Ontario Paper Co.*, 261 U. S. 46, 67 L. Ed. 523, are in point:

“The defendant invites attention to the fact that one or two paper makers are increasing this head and *giving up* the pitch, for the purpose of increasing the speed of the stock. We do not see that these circumstances in any way affect the validity of the Eibel patent. If defendant or others can do what Eible accomplished in *another way*, and by means he did *not* include in his specifications and claims, i. e., by additional head and the abandonment of a substantial pitch, *they are at liberty to do so* and avoid infringement.”

In *Turrill vs. R. R. Co.*, 68 U. S. 510, 17 L. Ed. 668, the Court said:

“Patents for invention are *not to be treated as mere monopolies*, and, *therefore, odious* in the eyes of the law; but they are to receive a *liberal construction*, and under the fair application of the rule, *ut res magis valeat quam pereat*, are, *if practicable, to be so interpreted as to uphold, and not to destroy, the right of the inventor.*”

In *Providence Rubber Co. vs. Goodyear*, 76 U. S. 788, 795, 19 L. Ed. 566, the Court said:

“*Liberality* rather than strictness should prevail where the fate of the patent is involved, and the question to be decided is whether the inventor *shall hold or lose* the fruits of his genius and his labors.”

In *McClain v. Ortmyer*, 141 U. S. 419, 425, 35 L. Ed. 800, 804, the Court said:

“It is true that in a case of doubt, where the claim is fairly susceptible of two constructions, that one will be adopted which will *preserve to* the patentee his actual invention.”

See also *Topliff v. Topliff*, 145 U. S. 171.

What might have been done with a prior device cannot be urged in aid of the defense of anticipation.

Miehle Printing Press Co. vs. Whitlock Co., 223 Fed. 647.

As said by this Court in *Los Alamitos Sugar Co. vs. Carroll*, 173 Fed. 280-284:

"The alleged prior device must have been complete and capable of producing the desired result. One should not be deprived of the results of a successful effort merely because some one else has come near it."

In *Naylor v. Alsop Process Company*, 168 Fed. 911, 920, (C. C. A. 8th), Judge Amidon said:

"When it is sought to ascertain the state of the art by means of prior patents, nothing can be used except what is disclosed on the face of those patents. Such patents cannot be reconstructed in the light of the invention in suit, and then used as a part of the prior art."

In *Carnegie Steel Co. vs. Cambria Iron Co.*, 185 U. S. 403, 46 L. Ed. 968-1005, Mr. Justice Brown said (p. 446):

"It only remains now for the wisdom which comes after the fact to teach us that Jones discovered nothing, invented nothing, accomplished nothing."

In *Diamond Rubber Co. vs. Consolidated Co.*, 220 U. S. 428, 55 L. Ed. 527, Mr. Justice McKenna said (pp. 434, 435):

*"Its simplicity should not bind us as to its character. * * * Knowledge after the event is always easy and problems once solved present no difficulties, indeed, may be represented as never having had any, and expert witnesses may be*

brought forward to show that the new thing which seemed to have eluded the search of the world was always ready at hand and easy to be seen by a merely skillful attention. But *the law has other tests of the invention than subtle conjectures of what might have been and yet was not.* It regards *a change as evidence of novelty, the acceptance and utility of change as a further evidence, even as demonstration.*”

In the Court below appellees cited, and apparently relied upon, the following cases:

Adams vs. Bellaire Stamping Co. (141 U. S. 539, 35 L. Ed. 849)

in which the Court said:

“The court did not * * * err in refusing the instruction requested that before the patent could be held invalid by reason of a prior patent it was not sufficient to find one of the elements in one patent and the second in another, and a third in another.” But, the Court added, “*If the patent were for a combination of new or old elements producing a new result, such instruction might have been correct.*” * * *

Duer vs. Corbin Co., 149 U. S. 216, 37 L. Ed. 707,

in which the Court remarked:

“*All that he claims as invention is found in one or more of the prior patent.*”

The construction described in Claim 12 of the Cleveland patent is *not found* in any preceding patent or device.

McMillin Co. vs. Androscoggin, 291 Fed. 134
(D. C.)

The patent (1,173,290 Feb. 29, 1916) considered was for a cloth board. The Court found no new result produced by the invention.

Hollister vs. Benedict Co., 113 U. S. 59, 28 L.
Ed. 901.

The Locke patent (9339, Aug. 3, 1869) was involved. It covered a printed label "designed more especially for use in sealing liquor casks with identifying marks." The prior art showed a stamp giving the same result. Infringement could only have been found by giving the claim a broad interpretation.

Huebner Co. vs. Matthews Gravity Carrier Co.,
253 Fed. 435 (C. C. A. 6th).

Considered patent No. 890,917, June 16, 1908, to Matthews & Lister, and No. 978,466, Dec. 13, 1910, to Matthews both for gravity carriers. The features emphasized in the claims were: Metal side rails and rollers; stationary axles, with revolving rollers, sectional frames, ball bearings: The Court remarked:

"Every element of the claims in suit is old, what has been done here is to adapt and substitute some old and familiar devices in place of certain parts of the earlier gravity carriers. * * * This in-

volved for the most part simply a change in material. * * * The substituted devices practically performed not only the same functions as had been performed by the replaced parts, but also the same functions as they themselves had performed in devices of the prior art * * * and the result achieved is *exactly* the same as the old one."

In which of the alleged anticipating devices in the case at bar is there found an easily cast A-shaped bed-plate that is tapered toward the front end which is provided with a bearing, and the arm is bifurcated so that it may be mounted astride the bearing?

In the case at bar we have these *new features and new results*: Parts are more easily and more cheaply cast. The device is stronger as a whole. The parts are specially constructed mutual to support each. *One bed-plate could be used for either arm-unit*, as against the preceding log turners requiring a different bed-plate for each arm-unit. Appellee Sumner Iron Works paid the new combination and results so achieved the tribute of adopting them for the manufacture of its *STANDARD log turner*.

After the fire in Sumner Iron Works shops in 1913 it involved the same expense to make the changes in construction one way or the other; yet appellee did *not* adopt a device like Defendants' Interrogatory Exhibit "A" which Mr. Sumner had seen in Frazier River, Canada, in 1906, but instead adopted "a *structure very*

similar to that shown in Mr. Cleveland's patent here," as Mr. Sumner said. (Trans. 68).

Appellees seem to have deduced a false canon from their cases, namely: that there are no generally recognized canons of decision governing the premises. In other words that each judge must decide the issue of patentable novelty according to his own impressions; that is, upon the impression the patented object makes upon the Judge in the light of his *own* experience, *as distinguished* from "*looking at it through the evidence with the eyes*" of those versed in the industry with which the invention is related (Kurtz vs. Belle Hat Lining Company, Supra). But no such doctrine is affirmed by those cases.

Appellees also contended that the presumption of validity usually attaching to a patent is in the instant case seriously impaired because the Examiner in the Patent Office failed to cite as references the patents which Appellees pleaded in their answer. Such might be true if the patents were real anticipations (American Can Co. vs. Golden Mfg. Co., 290 Fed. 523).

But in the case at bar the Appellees themselves negatived the pertinency of the patents pleaded by them. In answer to the following interrogatory:

"Specify as to each of the patents cited in paragraph XIV of the Answer herein, the particular mechanical feature or combination of parts described therein, on which the defendants will rely on the trial of this case as instances of prior publication of the patented invention here in suit"

the Appellees said:

“None of the patents designated in said interrogatory *are relied upon* to show an *exact* duplication of the construction shown in the patent in suit, but all show, collectively, that prior state of the art upon which said patent was predicated, and show it to *anticipate* any invention exhibited in the subject matter of Claim 12 of said patent as the sole claim relied upon by plaintiff.”

In the first place, Appellees had the burden of establishing, convincingly, the pertinency of said patents *not* as suggesting an element of the combination, but of suggesting the combination in its entirety.

But the argument need not be extended any further, for the principles which govern the issue here involved have also been repeatedly and clearly announced by this Court. One instance is found in the case of *Doble vs. Pelton et al.*, 186 Fed. 526, so ably decided by the late Judge Van Fleet (referred to by the C. C. A. 2nd in its above abstracted opinion expressed in *Kurtz vs. Belle Hat Lining Company* (*Supra*).

The patent there considered was the reissued patent to Doble, February 27, 1906, No. 12,460, for an improvement in Nozzles for Impact Water Wheels. The problem involved was the providing of a needle valve arranged “to permit the use of exterior means for moving the needle valve back and forth.” In order to accomplish this the nozzle had to be curved, but this resulted in a reactive force tending strongly to turn the

nozzle (763). "To overcome this tendency, Doble conceived the idea of *curving* the nozzle so as to place the axis in the plane of the nozzle's sinuosity."

Infringement was not denied; but the defense vigorously asserted anticipation, non-invention, aggregation—just as in the case at bar.

Judge Van Fleet said with regard to the contention that the invention did not represent a true combination:

"It is well established you *cannot construe* a patent for a combination, such as this, *with reference to novelty as to any distinct separate feature*; for that purpose *the device is to be judged as a unit, and it is to be determined from its unitary use* whether it is a valuable combination or whether a mere aggregation. *You cannot take it piece meal* and finding that its various elements have been anticipated in different devices of the prior art, none of which, however, cover *all* of the elements which are to be found in the combination, and thereby successfully sustain a defense of the anticipation. You must find *all* the elements of the combination *or their equivalent* in some particular device which is claimed to be in anticipation."

This Court, in reviewing and affirming said case (190 Fed. 766; opinion by Judge Gilbert) said:

"There can be no doubt of the value of appellee's invention. Its value is conceded in the evidence. It has gone into general use and it has

superseded all prior combinations * * * (763)

“It is urged that the addition of this feature to the combination does not show invention; that it was to do the obvious thing, that which any mechanic would have done when called upon to remedy the known defects of the prior devices.

“To this it is to be said among other things that although the defects of the nozzles which had been in use for many years prior to Doble’s invention were well known and recognized, and mechanics and engineers had been called upon to remedy them, no one prior to Doble thought of the simple expedient of changing the axis of the pipe from the horizontal to the perpendicular. That one step in the art marked success in the combination.” * * *

“It is contended that the claims of the Doble patent cover a mere aggregation of elements, and not a true combination. An *aggregation* is the mere assembling of separate elements *without changing their respective separate functions or accomplishing any result other than the added results of those functions*. In order to be patentable, a combination of elements must in their co-relation produce a different force, or effect, or result, from the sum of that which is produced by their separate parts. *Reckendorfer vs. Faber*, 92 U. S. 347, 23 L. Ed. 719. It is not necessary that each element in performing its own function shall also modify the function performed by the others. *Hailes vs. VanWormer*, 20 Wall. 353, 22 L. Ed. 241. *It is*

generally sufficient if there be such coaction that a result is produced which is NEW, AND THE RESULT IS NEW IF it is substantially a better result than that which has been accomplished by other combinations. Loom Co. vs. Higgins, 105 U. S. 580, 26 L. Ed. 1177.

“The fact that there is novelty in one of the elements, as in the present case in the change of the plane of the nozzle pivot, does not justify a claim to a combination of the elements, unless there is coaction between them to produce a new result, and a combination is not unpatentable merely because the result *might* have been accomplished by other combinations. The claims of the patent in suit cover a hydraulic apparatus consisting of an impact wheel with buckets, a nozzle pipe of double curved form for directing a stream of water upon the bucket, means for varying the amount of water discharged from the nozzle, and a supply pipe to which the nozzle is pivoted on an axis in the plane of its sinuosity, and substantially parallel to the axis of the wheel. We think there can be no question that the elements so described co-operate to produce a *single* result, which is the *perfect regulation* of the jet, together with the greatest *practical economy of water*. The means for varying the amount of water discharged from the nozzle is the needle valve, and this not only controls the volume of the jet, but through the action of the governor it also controls the direction of the jet. The nozzle pivoted to the pipe line in a plane at right angles to the plane of its curva-

ture renders the nozzle sensitive to the deflecting power of the governor. The result is *a successfully working combination*, one that marks a distinct improvement upon any prior combination. *This result would not be produced by the elements in their separate state, or as assembled in a mere aggregation without co-operation and functional relation to each other.*"

Thus two canons which govern the premises may be stated as follows:

(1). The alleged anticipation must be considered *as it existed* when the patented improvement was made, and *not* in the light of *what might have been done* with it,—because that would call in the aid of *hindsight*.

(2). *Any change* made by the patentee in the alleged anticipation by which *some new and beneficial result*, according to the evidence is attained, is *looked upon with favor and liberality*, and the court *will not measure the degree* of the change, nor of the new result or the benefits flowing therefrom. But the court *will cast the burden upon him who charges anticipation or non invention*, in the face of a beneficial change, however slight, to substantiate his affirmation by proof sufficient to convince beyond any reasonable doubt.

The degree of the new and beneficial result affects the use of the improvement only; *particularly so where the improvement is specific and may be easily evaded* by those not considering it of sufficient importance to

warrant the payment of any consideration for its use.

Any other rule would nullify the presumption of novelty which attaches to a patent; would also *reverse the burden* by requiring the patentee instead of the infringer to convince the Court.

And yet that would be the result in the case at bar if the decision of the court below were to be upheld.

The combination was not anticipated by any similar combination. The trial court conceded that. It said (Opinion, Trans. 167) :

“The use of a push-arm in a log turning device, bifurcated and straddling the bearing formed upon the outer end of the bed-plate is not sufficient in my opinion, in view of the prior art, to constitute invention.”

Such statement is a clear admission that to the mind of the lower Court *the combination* was not shown by the prior art. Such view is further confirmed by the fact that the trial Court specially referred to the fact that “push arms” as such are old in the art, and while these “were straight with a single bearing on the shaft, or two such arms with a distance plate bolted between them”—the Court was of the opinion that since such arm was for the same purpose, that is, turned the log in the same way, there was no invention in the Cleveland patent to be predicated upon the use by him of “an arm divided or forked at the lower end.”

The District Court overlooked entirely the change made by Cleveland in the bed-plate so that *his* forked

arm could be placed astride of the single bearing provided on the tapered front end of the bed-plate, whereby the parts mutually supported each other. The changes so made were *cooperative changes* and they were original with Cleveland.

It is evident from said expressions of the Court below that it lost sight entirely of the benefits achieved by Cleveland: *greater strength, economy*, and the fact that *a single casting could be used effectively for both arm units*; thus disregarded the factors which caused appellees, after direct notice of the Cleveland patent to adopt his construction and *make it their "standard"* log turner, notwithstanding they had to face litigation in so doing.

The anticipation is not even effected by synthesis, because the effects of the elements upon each other were not known, and *could only be ascertained by trial*. It was not a mere question of *how* the arm-units of the log turner would work. They would turn the logs beyond question; but *the real question was how would they stand up under the hard service to which subjected?* Would there be a *saving* in repairs? And coupled with these questions was the further question, Could the cost to the consumer be reduced? (Mr. Hines, Trans. 112.)

In the invention here in issue all these questions are affirmatively answered by the evidence. As Mr. Demageon said (Trans. 141):

The Cleveland device exhibits "*the greatest strength obtained at minimum cost.*"

“The arm (push or hook) being bifurcated and having considerable spread and supported on each side of the bearing is stronger * * * than the type of arm shown in (Defendants’ Inter.) Ex. A.” Mr. Hines said the same thing (Trans. 109).

Appellees evidently thought so, too, otherwise they would have adopted the Ex. A construction instead of appropriating the Cleveland patent.

Patentee Cleveland manifestly was enterprising, and spent *some* thought, energy, experimentation and money on his improvement. And *some* new and beneficial result was so attained, as admitted by appellees’ own acts in the premises.

Shall the appellees be allowed to appropriate all that and profit by it, *without* any compensation to Cleveland and his assigns? Would such result promote the advancement of our arts? Hardly.

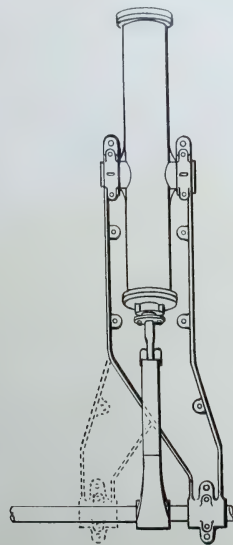
It is submitted, therefore, upon the evidence in this case that the decree of the lower Court was wrong and should be reversed.

Respectfully submitted,

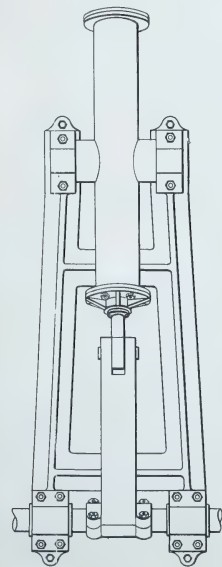
T. J. GEISLER,
Counsel for Appellant.

DIAGRAM ILLUSTRATING, BY COMPARISON, THE DIFFERENCE BETWEEN CLEVELAND'S LOG TURNER DESCRIBED BY CLAIM 12, AND THE DEVICES WHICH APPELLEES CONTEND SUGGESTED THE INVENTION.

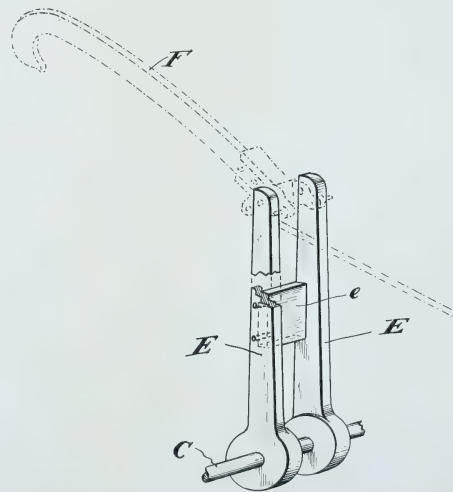
Diagrammatic representation of *evolution* of old crooked bed Simonson log turner, shown by Defendants' Inter. Ex. B, into straight-bed type seen by Sumner at Frazer River, 1906, and shown by Defendants' Inter. Ex. A and Ex. 27. The dotted line section illustrates the change made.



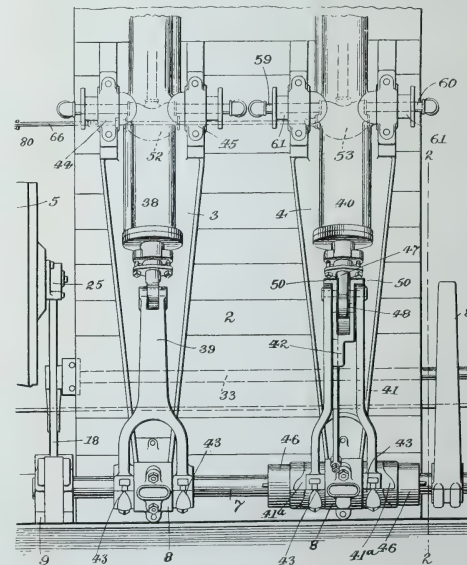
Diagrammatic representation *in plan* of push-arm unit shown by Defendants' Inter. Ex. A (Trans. 288 and Defendants' Ex. 27, Supplement to Trans. 6).



The Arm E (termed bifurcated by appellees) shown in Fig. 1 patent of Flavel Simonson No. 448,592, March 17, 1891, Defendants' Exhibit 29. The log turner shown in this patent had no bed-plate at all. Witness Thomas—for Defendants, Trans. 75 and see patent Trans. 210.



Left-hand portion of Fig. 3 of drawings of Cleveland patent showing the combination described by Claim 12 and covering both arm units.

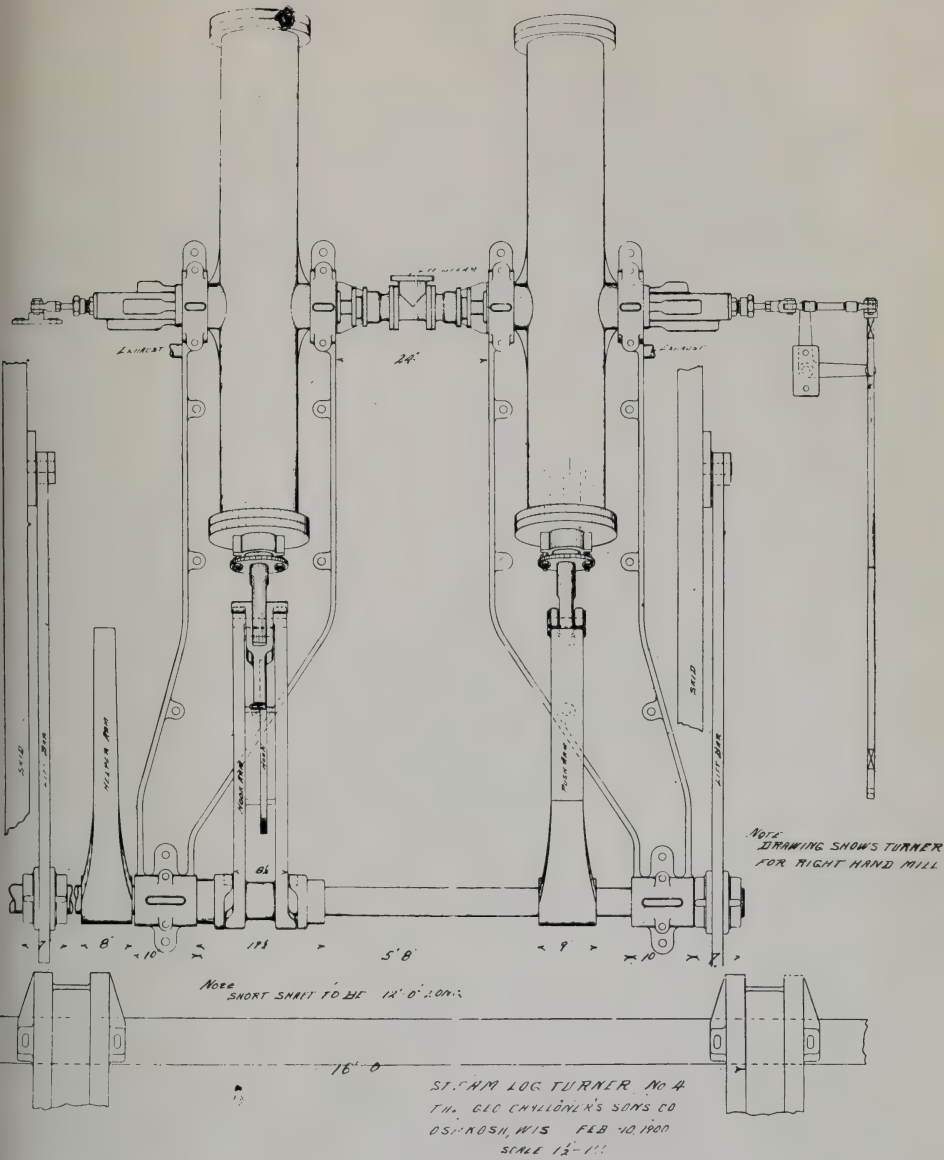


DEFENDANT'S INTERROGATORY EXHIBIT A

Being identical exhibit referred to in the Deposition of Chas. E. Cleveland
as Defendant's Deposition Exhibit B



DEFENDANT'S INTERROGATORY EXHIBIT B



Reproduction of Page 85 of The Timberman
of March, 1912

PLAINTIFF'S EXHIBIT 16

MARCH, 1912

THE TIMBERMAN

85

<p>HAZARD WIRE ROPE FOR EVERY PURPOSE</p> <p>HAZARD MANUFACTURING COMPANY WILKES-BARRE, PENNA. NEW YORK 300 ELY ST. PITTSBURGH 21 CONESTOGA BUILDING CHICAGO 352-354 WEST ADAMS ST.</p>	<p>HAZARD SPECIAL PLOUGH STEEL WIRE ROPE "OLYMPIC BRAND" FOR LOGGING PURPOSES</p>
<p>MARSHALL-WELLS HARDWARE CO., Portland, Ore., Seattle, Wash., Spokane, Wash., Agents</p>	



CLEVELAND'S IMPROVED

SIMONSON LOG TURNER

WITH INDEPENDENT STEAM SKID LIFT

No leaky trunnions, because valves are placed below the floor timbers.—Note the straight steel bed plates and forked hook and push arms.
If you are going to put in a Turner, better get the best and latest improved.

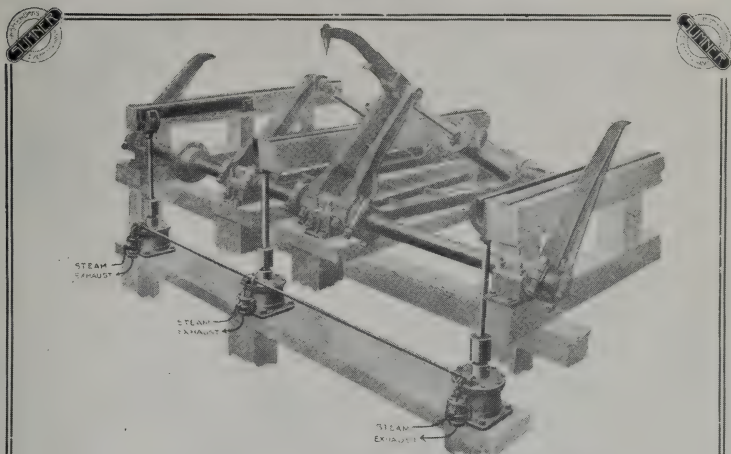
GIDDINGS & LEWIS MFG. CO.

FOND DU LAC, WISCONSIN

Photo Reproduction of Inside Page of Cover of The
Timberman of August, 1921

PLAINTIFF'S EXHIBIT 17

THE TIMBERMAN



Shows "SUMNER" standard Log Turner with Lueth Patent Independent Unit Cylinder Skid Lift

LOG TURNERS—Built with 12 or 14 cylinders with 7 diameter shaft; length and number of arms as required. Beds and arms of cast steel; cylinders and boxes of cast iron.

INDEPENDENT SKID-LIFT—Lueth patent With a separate cylinder for raising each skid. Simple to install, most effective in operation, low cost of upkeep.



SUMNER independent Log Turner With Vagner Bar Operating up Through Link Arm

Write for our Log Turner Bulletin No. 4

ORIGINATORS — NOT IMITATORS

SUMNER IRON WORKS

Main Office and Works at EVERETT, WASHINGTON

Portland Office, 72-74 2d East Street
Seattle Office, 206 First Ave. South

Grays Harbor Representative
W. H. Beane, 822 7th Lower Ave., Centralia, Wa.

Canadian Plant at
Vancouver, B. C.

IN THE

United States Circuit Court of Appeals

FOR THE

NINTH CIRCUIT

D. J. MURRAY MANUFACTURING
COMPANY, a corporation,

Appellant,

vs.

SUMNER IRON WORKS, a corporation,
and SILVERTON LUMBER COM-
PANY, a corporation,

Appellees.

APPELLEES' BRIEF

*Upon Appeal from the United States District Court
for the District of Oregon*

COOLEY, HORAN & MULVIHILL,
MacCORMAC SNOW,
Attorneys for Appellees.

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APPELLEES' BRIEF

*Upon Appeal from the United States District Court
for the District of Oregon*

HON. R. S. BEAN, *Judge*

STATEMENT OF FACTS

The question for determination in this cause is the validity of claim 12 of what is known as the Cleveland Patent for improvement in log handling mechanism, issued September 7th, 1909, to Charles

E. Cleveland and by him afterwards assigned to the plaintiff.

This claim reads as follows:

“12. In a log-handling mechanism, the combination of a bed-plate provided at its outer end with a shaft-bearing; a shaft extending through said bearing; an arm in operative relation with the shaft, said arm being bifurcated and straddling the bearing formed upon the outer end of the bed-plate; a power cylinder pivotally mounted upon the bed-plate; and a piston-rod working in the cylinder and connected at its outer end to the adjacent end of the arm.”

This claim has been analyzed in the brief of the Appellant which for convenience of discussion we reproduce here:

(a) “A bed-plate (3 or 4) provided at its outer end with a shaft bearing (8);

(b) A shaft (7) extending through said bearing;

(c) An arm (39 or 41) in operative relation with the shaft;

(d) *Said arm being bifurcated and straddling the bearing formed upon the outer end of the bed plate:*

(e) A power cylinder (38 or 40) pivotally mounted upon the bed-plate;

(f) A piston-rod working in the cylinder and connected at its outer end to the adjacent end of the arm."

A full cut of the model of this combination is shown on page 4 of the Appellant's brief. The rock-shaft, piston-rods, cylinders and the connections for the same with the arms may be eliminated as unpatentable as they are all clearly defined in the Simonson patents, which will be hereinafter referred to. When this is done we have left only the straddling of the bearing by the bifurcated arms for the shafts at the outer ends of the bed plates, and the bed plates themselves.

Excluding the element "d", which refers to the bifurcated arms straddling the bearings, this claim describes a complete operative combination which was not only very old, but is admitted to have been known to the Patentee, Cleveland, when he made his alleged invention in issue. (Page 162, Trans.)

It is important to note that the arm designated as "c" and being either of the two arms indicated in the patent by 39 and 41, is bifurcated at both ends but the bifurcation at its lower end only is called for in claim 12.

Its upper end is bifurcated to receive the outer end of the piston rod 47 to which it is pivotally connected by a pin clearly shown but not identified by a reference numeral, so obvious and of such familiar use is it. Said pin is itself a short shaft and insofar meets element "b" of the foregoing analysis of claim 12. So constructed it also meets the terms of element "c", the piston rod 47 "in opera-

tive relation with the shaft." If this shaft or pin is keyed into or firmly attached to the arm you have a perfect example of a "bifurcated arm straddling a bearing."

It is to be noted further that this claim, insofar as the element "d" is concerned, does not claim a patent upon any particular shape or form of bed plate. Cleveland made a mechanical improvement in making a straight bed plate instead of the old crooked type in use on the older type log turner but he did not try to patent this improvement. He could not have secured a patent on a straight bed plate for straight bed plates were old at the time of his application. The parties to this cause have stipulated that "machines substantially the same as that shown in Defendants' Interrogatory, Exhibit "A," were of public knowledge or use in the United States prior to April 13, 1907." (Trans. page 26). The Court will note that Cleveland's application was dated two years after that date. A photograph of the model referred to in this stipulation is shown on sheet 288 of the Transcript. An outline cut of Defendants' Exhibit 27 is shown on page 6 of the supplemental transcript.

The Cleveland bed plate had diverging sides and those of Defendants' Exhibit 27 are parallel. However, this is a mechanical difference. If it were not the issue would be the same, for claim 12 does not attempt a monopoly of the straight bed plate whether parallel or diverging. Therefore, we may eliminate the bed plate from the case, except insofar as it contains at its outer end a bearing in which the shaft rocks and which is straddled by the bifurcated arms. The fact that the shaft rocks in

this bearing is immaterial because old. The bifurcation of the arm to straddle the bearing is the only element in claim 12 about which there is any real issue. It is conceded by the Appellant in its brief that the use of a bifurcated arm *per se* as an element in various types of machinery is old. It is therefore and must be conceded that the Appellees have a perfect right to use a bifurcated arm precisely the same in all respects as the one employed by plaintiff, provided, only that it shall not straddle the bearings on the bed plate which carries the shaft. It is to this very last degree of refinement of limitation that the language of claim 12 reduces the issue.

It may be interesting and of benefit to the Court to detail a brief statement of the history of log turner patents as shown by the record in this case:

When on April 13, 1909, Cleveland, in respect to the patent sued upon, entered the field of invention by filing the application upon which the said patent issued, he found the art crowded, as will appear from the list of log turner patents introduced in evidence, on behalf of Defendants.

The earliest log turner patent of that list is the Schofield patent, dated December 9, 1884 (Defendants' Exhibit 4). (Page 188 Transcript). That patent shows a Log Loader in which logs are disposed in lateral succession upon an inclined sideway "E," consisting of duplicate members. The inclination of the skidway tends to deliver, by action of gravity the logs to an ordinary carriage "A." Such a carriage was designed and adapted to take one log at a time, and afterwards to feed it endwise

to the saw or saws of the mill. The usual equipment of such a carriage, included then as it does today, head-blacks with knees to hold a log which are shown clearly in figures 1 and 2, and which, being then of common every day use in saw mills, are not identified by reference, character, or description. The logs delivered to the carriage simply by gravity would be necessarily brought to a standstill by encounter with the knees of the head-blacks, but means for separating the foremost log from the other logs was still necessary.

The Schofield patent to meet that requirement shows and describes a pair of cant levers pivotally mounted one on each member of the skidway. The function of the cant levers is to interrupt the downward roll of the logs on the skidways "in such manner that but one log will be loaded upon the carriage at a time," (Schofield patent, page 1, lines 65-66). The Schofield patent contains, therefore, the germ of every subsequent log-loader. Besides the cant levers, the said patent introduces by name the "nigger" "D," to which some of the witnesses on the stand make reference. Its function is the same today substantially as it was forty years ago, namely, to rotate a log about its longitudinal axis upon the carriage. The sawyer, Marler (Trans. pp. 81-82) says: "This turns the logs to the carriage." The operations of the cantlever mechanism and of the "nigger," respectively, are subject to mechanism under manual control.

The Schofield patent is described with a degree of detail because that patent shows how old in the art complete log turners are and because the drawings and specifications of that patent, being exceeded-

ingly simple and clear, aptly serve to illustrate the foundation upon which was built subsequent development of details in the art.

Next after Schofield, follows, in the development of the art, the "Simonson Log Turner," as it is known in the art today, and which is the type of turner in general use to this day. The machines, both of Plaintiff (see Cleveland's deposition, page 157), and of Defendants are of that type. In fact it was not until the Simonson's patents were about to expire that Cleveland "gave serious thought to the designs of an improved Simonson turner." (Trans. 157).

The Simonson patents are six in number, (Defendants' Exhibit 5½ to 10, inclusive), but the distinctive features of the Simonson invention, towit, a rock-shaft with its hook arm and push arm and an engine for actuating the rock shaft, are fairly disclosed in his earliest patent, No. 408,760, issued August 13, 1889, on an application filed December 17, 1888. (Defendants' Exhibit 5½) (Page 195 Trans.) Substantially all that he subsequently invented was in the nature of modification or elaboration of his original invention.

Attention is drawn to the fact that not one of the Simonson patents shows only other bed plate than the floor of the mill upon which his machine is installed. However, magnified in importance to serve the occasion of this suit a particular form of bed plate may be, it appears to have been nevertheless regarded by Simonson, the parent of the art to which plaintiff's and defendants' machines belong, as being nothing more than what

any mechanic was competent to devise, bed plates being, as the Court of course knows, in common use in every kind of heavy machinery. Otherwise, there is little room for doubt that Simonson would have made application for patent, as indeed, by reason of its rejection, he may have done without the fact being brought to light in a patent. At all events, it is a fact admitted, that two forms of bed-plate, namely those called crooked bed-plates and straight bed-plates, although not patented, have been used on Simonson log turners for a long period antedating Cleveland, even up to and including the present day. Crooked bed-plates were known to Cleveland before he made the alleged invention of his patent in suit (Compare Defendants' Interrogatory Exhibit B, with Cleveland's Deposition, p. 160 Trans.) and are shown in the patent to Kratsch (Defendants' Exhibit 20). A full mechanical equivalent of a bed-plate, if it is sought to contradistinguish it from a mill floor, is shown in the earliest Simonson patent (Defendants' Exhibit 5½), namely, logways "b," which serve both for the support of logs on the turner, and also for cooperatively assembling the engine and the shalt.

After the year 1891, during which the latest Simonson patent issued, a period of more than four years elapsed before any attempt at improvement in log turners appears to have been made. Then, on November 6, 1895, one McNerney applied for letters patent which were issued to him on April 28, 1896 (Defendants' Exhibit 13). (Page 228 Trans.)

Next, on April 11, 1899, a patent was issued to E. E. Fitzgerald (Defendants' Exhibit 14) (Page

242 Trans.) This patent is important in that it makes disclosure (Fitzgerald patent, page 1, lines 26 to 33, inclusive) of means intended to prevent that breakage of bed-plates which Thos. B. Sumner testifies was due mainly to the dropping or pounding of the logs on the bed-plates, (Trans. pp. 156-159), rather than to tension strain on them, to which Cleveland attributes breakage of bed-plates (Cleveland's Deposition, Trans. p. 157).

After the last named patent issued, only two patents appear of record, prior to the issue of the patent sued on. They are patent No. 852,231, issued April 30, 1907, to D. A. Kennedy, and patent No. 992,212, (page 263 Trans.) issued May 16, 1911, to W. H. Kratsch (Page 278 Trans.). Neither is of importance except that the last named patent, which is for improvements in skid lifting devices, shows, in Fig. 1, of the drawings, an integral hook-arm not lettered but indicated in said figure by the hook F attached to it. It is bifurcated at both ends for connection, respectively, with the piston rod and the rock shaft of a log turner.

Besides the patents above enumerated, in addition to Defendants' Exhibits 24 and 25, supported by the testimony of Thos. B. Sumner, numerous early patents are introduced to show the wide extent to which bifurcated arms straddling bearings had been employed generally in the mechanical arts all prior to Cleveland's alleged invention. Such patents are shown in Defendants' Exhibits 1, 3, 5, 11, 15, 16 and in others not necessary to particularize. Among those, Patent 382,760, (Defendants' Exhibit 5) issued May 15, 1888, to James B. Erwin, is, in all material respects, a substantial anticipation of

Claim 12 of the Cleveland patent sued on. True, it is found in a cognate art, and is not a log turner; but it shows with only one variation, the combination of all the mechanical elements called for in said claim 12—straight bed-plate and all—in Air Compressor. It is also true that the object of the air compressor is to compress air (a gas) in a cylinder by aid of a piston and its rod, instead, as in a log turner to utilize steam (gas) pressure in a cylinder to drive a piston. The function in the one instance is merely the reversal of that in the other, but the two mechanical combinations are substantially identical, except as to the aforementioned single variation. That variation is that the arm N of the Erwin patent is not bifurcated, but is pivotted to the bed-plate(base E) between close fitting projecting lugs NM, on said base, by a pivotal bolt L. The superior mechanical advantages of a broad pivotal connection over a narrow one is not only elementary and was of course as well understood forty years ago as it is today, but in the Erwin patent it is well exemplified in pivotal connection between the cylinder A and the bed-plate or base E. Said connection is a bifurcated one pivoted on a bolt C, between lugs DB on the base.

Defendants' Exhibit 5 would be of greater potential importance except that the subject matter of defendants' Interrogatory Exhibit A, (page 288, Trans.) comprehends all Erwin shows, and in view of the stipulation heretofore referred to that this machine was in public knowledge and use prior to April 13th, 1907, said date being two years prior to the filing date of Cleveland's application. Wherefore Ex. A" constitutes a legal bar to the extent of its disclosure.

Counsel for Appellant complains that the pertinency of the patents introduced in evidence for the defendant was not explained by the Appellees. The various patents issued to Simonson, Schofield, Fitzgerald, McNerney, and Kennedy, have heretofore been explained as intending to show the progress of the art, with respect to the development of log turners. We have already explained at some length the pertinency of the patent granted to Erwin for improvement in air compressors.

The other various patents were introduced with the purpose of showing that a bifurcated arm straddling a single bearing was old in the art at the time Cleveland made his application for a patent upon the log turner in question here. The Coller patents, shown on sheets 178-181 of the Transcript shows a Harvester Pitman bifurcated at both ends and straddling the bearing upon the Harvester sickle. See the arm "C" in figures 1, 2 and 4.

The Godwin patent shown on sheets, pages 182-185, of the Transcript were improvements in oscillating engines and shows a bifurcated arm straddling a single bearing, which is clearly shown in figures 2 and 5. The crank shaft and connecting pistons does not bear any letter or numeral identifying the same but are clearly shown in the drawing. If the operation of this engine was reversed so that the crank shaft would operate the piston instead of the piston turning the crank shaft you would have a perfect example of a bifurcated arm straddling a single bearing, and operating substantially as does the arms in the Cleveland patent.

Wheeler patent for a Pitman shown on sheets

186-187 of the Transcript shows a bifurcated arm in figures 1 and 2, straddling a single bearing. This is shown particularly well in figure 1.

The Powers patent is for a steam engine. (Sheets 219-223, of the Transcript.) Figure 1 shows a bifurcated arm in the connecting rod F' connecting the crank shaft G with the piston rod D.

In the Rhodes patent for a gas engine, pages 224-227 Transcript, is also shown a bifurcated arm straddling a single bearing in the two crank shafts, numbered 3 and 3X, connected with the piston 4.

In the McNerney patent for log loader and turner, sheets 228-241 of the transcript a bifurcated arm is shown in figure 2 on page 229, being a built up or fabricated arm M and M straddling the bearing C3.

The Carter patent for Connecting Device shown on sheet 52-254 of the Transcript. Figures 4 and 6 show the bifurcated arm clearly. In figure 4 the connection between the arm 6 with the shaft and straddling the bearing 15 is clearly shown.

The Bottkowski patent for Valve Mechanism for engines shown on sheet 255-259, of the transcript shows the bifurcated connecting rod 5 connecting the piston with the crank shaft 4 and straddling a bearing not numbered. A reversal of the operation of this engine would also clearly illustrate that the crank shaft itself is a bifurcated arm straddling a single bearing.

In the Stanley patents for a Gasoline Engine shown on sheets 270-274 of the Transcript there is

an excellent illustration of the bifurcated arm straddling a single bearing in the connecting rod F' straddling the bearing on the crank shaft B. (Fig. 2, Page 271 Transcript.) The boxes carrying the bearings are numbered F2.

In the Lindberg and Fitzgerald patent for oscillating engines, sheets 275-277 of the Transcript, the bifurcated arm straddling a single bearing is shown in the valve stem 16 bifurcated at 17 and straddling bearing 19.

The attention of the Court is also called to the testimony of Mr. Sumner on sheets 65 and 66 of the Transcript wherein he refers to the photographs of a shingle machine brought out in the year 1906 which shows a bifurcation of the arm which drives the carriage back and forth. (Defendant's Exhibit 23), and also the photograph of the Swing Trim with bifurcation at both ends, which Mr. Sumner states represents a machine built prior to 1906. (Defendants' Exhibit 24).

The Simonson patents for log turners, No. 448,591 and 448,592, shown on sheets 207-214, Transcript, both show a divided hook arm. In the first patent, upon page 207, the hook arm is represented by "E" and the space bar by "e", and in the second patent the hook arm is designated in figure 1, page 210, by "E," and the space bar by "e." A cut of the arm "E" of the second patent referred to is produced on page 9 of the Supplemental Transcript.

The question as to whether this hook arm is a bifurcated arm was the subject of considerable testimony in the trial of the case below. Mr. Thomas, one

of the witnesses for the defendant, in speaking of this arm says that this is an arm bolted together, which is in effect just the same as if it were cast together. For all intents and purposes to use, it is one. In fact these three part are one for use. It is a bifurcated arm and it is carried in operative relation the shaft C shown on the drawing. (Pages 74-75 Transcript.)

Hines, in speaking of this arm says that he thinks you can design one separate piece with a bolted connection that is entirely satisfactory but he would not bolt the two arms together in that way for the reason that it would require an awful lot of machine work. He says that the perfectly obvious thing to do would be to cast it in one piece. (Page 108 Trans.)

Demangeon, one of the plaintiff's witnesses, in speaking of this arm says that it could be cast in one piece as well as built up, and that the art of casting in one piece or building it up of a plurality of pieces was perfectly well known in the art. (Page 147 Trans.)

We believe that a review of these patents and of the testimony of the witnesses hereinbefore set out will sufficiently establish to the satisfaction of the Court that the use of bifurcated arms straddling a single bearing was old in the art at the time that Cleveland made application for his patent.

Cleveland, in his deposition (Trans. 159) testifies that the bed-plates as contained in the Simonson machines were all built with an offset, or, in other words, the bearing at the end of the bed-

plate in which the shaft rotated was not in a center line with the steam cylinder, but was to one side of the same. The arms were constructed with a single bearing on the shaft as shown in Defendant's Exhibit B. (See cut Trans. 288.) He says:

"In my construction the shaft bearing of the bad-plate is in direct line with the center of the cylinder and push arm and thereby equalizes the strain. The advantages I proposed to secure by the changed construction was to get a stronger and more symmetrical machine." (Trans. page 160.)

Counsel for Appellant has quoted this language of Cleveland in his brief.

We desire to call the attention of the Court to Defendant's Exhibit 27, cut of which is shown on page 6 of the Supplemental Transcript. It will be noted that the bearing of the bed-plate in this machine is in direct line with the center of the cylinder and the push arm so that the strain which Cleveland attempted to care for as claimed by him, is equally cared for in the machine shown as Exhibit 27. The only difference is that in Exhibit 27 there is a double bearing on the shaft while in the Cleveland machine (Defendant's Exhibit 26) there is a single bearing on the shaft. But the construction of a machine with a single bearing on the shaft as against a double bearing on the shaft is not in any manner designed to better withstand the thrust of the cylinder, as claimed by Cleveland, because in each of these machines the thrust of the cylinder is in direct line with the push arm. Indeed Cleveland only claims that the forked arm with

a single bearing is better designed to stand the side thrust from the logs on the carriage when the carriage is moving back and forth. This conclusion of Cleveland's is disputed by the witnesses for the defendant even if this added element of strength was patentable, which we contend is not. However, if, as claimed by Cleveland, his design of a straight bed-plate in combination with the bifurcated arm straddling a single bearing, made a better machine he did not attempt in his patent to cover a design of bed-plate. As a matter of fact, he could not do so, because straight bed-plates were known in the art as admitted by him and by the stipulation, at the time he filed his application for a patent.

Hines, the expert witness for the plaintiff, in comparing these two machines, Defendant's Exhibits 26 and 27, respectively, states:

"Exhibit 26—if you subject that bed frame to compression there would be some tendency for the arms to spread apart at the trunnions. This is prevented by the two tie rods C and D and by the bolts in bed-plate, but the structure acts all together, as all bed-plates do. It is very compact, and for the same strength, a minimum amount of metal. *Now, Defendant's Exhibit 27, I feel quite certain, can be made amply sufficient for the purposes it is intended, provided proper care is taken throughout.* (Trans. 106) in fact, I see no reason why it could not be, but this frame, I think personally, is a little out of proportion to the front end." (Trans. pp. 105-106.)

"This bed-plate, (Defendant's Exhibit 27), can be constructed to do just exactly what the bed-plate shown in the Cleveland model does, but in doing it, in the first place, when you shove the arms up against the log you have a stress in the bed-plate, you would have a compression lengthwise of the bed-plate." (Trans. page 96.) Now in general, in designing structures or machines, if we can take an A-frame to stand a compression we would naturally do it; we certainly would not take a V-frame. *I concede that you can make this bed-plate equally as strong and equally effective, but you can't make it in the same way, or as clean-cut and natural design as that one there."* (Trans. 97.)

Witness Thomas, (Trans. 75), testifies that the floor can be called a bed-plate if it was strong enough to be a bed-plate.

"COURT: What is the purpose of the bed-plate in this patent?

A. To hold the parts together.

COURT: That is all the purpose?

A. That is all; to carry them, to hold them together.

COURT: It performs no function in the operation of the machinery?

A. No. It may be designed different ways and will work just as well if properly designed.

“If the floor were made strong enough it would be equivalent to a bed-plate, if the floor were made of iron, for instance, it would be all right.” (Trans. 76.)

With relation to the strength of the bed-plates in the old Simonson turner we desire to call the attention of the Court to the very pertinent testimony of Mr. Sumner on page 151-152 of the Transcript. He says that if you will take an old Simonson turner today with a crooked bed-plate and take the improved skid lifter, attach it to the old Simonson turner he don't believe you will have any broken bed for this reason; that under the old type in the raising of the skids the cams were on the main shaft; then as you would roll that and raise the skids up and the logs were turning away, all pounding was on the trip skids and the skids rested on the main shaft. When one of these immense logs is turned over and it comes down smash on the skids; the trip-skids are skids that are located on the sides here; that is supposed to take in modern practice now—actuated by a single cylinder—it takes this heavy pounding and this heavy jar off from the bed. Under the old method it was all on the shaft because the cams were all on the main shaft, and the end of the skid rested on the cams so the whole pounding the full force of the blow was always on the shaft and that was what happened; the crooked arm having such a small bearing on the wood, with this constant pounding kept pounding the narrow end of that into the wood and that was what caused the breakage; it wasn't because it was crooked, because the strain was endwise or the reverse.

In reference to the liability of breakage of these

arms from the side thrust of the log which Cleveland testified was greatly diminished in his machine by reason of the bifurcated arm straddling a single bearing, there was considerable testimony. On cross examination, however, the witnesses generally admitted that they had no knowledge of such breakage. In fact, Marler, testifies that he had never broken an arm nor a bed-plate, but he had seen an arm at the St. Helens Lumber Company at St. Helens strapped back together with bars of iron and rivets and this was back in 1916. (Trans.84-85.)

It is to be noted, however, that Marler did not testify that this breakage had been caused by the side thrust of the logs.

Hines did not testify with respect to any breakage, except in respect to a structurally defective detail with respect to the hook arm, which was corrected. (Trans. 126.)

In this connection there is a discrepancy which should be observed. The hook arm is in effect guarded on both sides of it by push arms which are in line and are parallel to it. Manifestly no obstruction could hit the hook arm without first passing the push arm.

Demangeon, another of plaintiff's witnesses, (Trans. page 143), testifies that he has known of no breakage of either arms. On the contrary, Mr. Sumner, from forty years in experience as an actual manufacturer, testifies that he has observed many breakages of push and hook arms of this manufacture but cannot call to mind of ever seeing a fractured arm that he noticed the fracture would

be parallel to the shaft. It has always been parallel to the cylinder, so it would indicate when the strain came and the breakage occurred was always in the turning or pushing of the logs. (Trans. 148-149.)

But perhaps the best evidence of all is the Sum-chines which they are now manufacturing, have ner Iron Works and the Allis-Chalmers in the ma-abandoned the Cleveland type of arm. (See Defendant's Exhibit 22 and Plaintiff's Exhibit 19). In this construction the push arm is forked with straight sides and has two bearings on the shaft instead of one as in the Cleveland type. It is true it was testified that the object in adopting this construction was to permit of the operation of what is known as the Hill Nigger through the fork of the push arm but if the bifurcated arm straddling a single bearing was so essential to the strength of the machine it would seem that the parties now manufacturing this turner would not abandon that type of arm for the sake of installing the nigger at a convenient place, because they can still retain the old arm and put this nigger in a separate place beside the shaft and between the hook and push arms. Certainly if the Cleveland type of arm was so much better in the way of strength in withstanding the side thrusts of logs as was claimed by the plaintiff, the parties now manufacturing this turner, after their actual experience in the operation of the same would be extremely slow to abandon the crooked arm merely to find a convenient place to install the nigger. (Trans. pp. 46, 47, 48, 128, 129).

Defendant's Exhibit 26, shows a solid boss attached the arm, said boss being simply an exten-

sion of the hub so as to give a greater bearing on the shaft.

With respect to this exhibit, Hines, the Plaintiff's witness, testifies that he thinks this could be made the equivalent of the push arm shown in the Cleveland type by the expenditure of more money and more metal. (Trans. p. 119).

Q. Then the only difference that you see between these two arms is one in respect to expense?

A. Not entirely in respect to expense; at the same time in this arm you must remember, this arm here, it isn't the single arm that we have to consider, it is the nice combination of design. Compactness, minimum cost of manufacture. I think that I very distinctly stated, was authorized to do so, that any manufacturer who wished to manufacture the split bed type with bifurcated arm, even straddling the bearing was welcome to do so, and we certainly would not waste our time in any patent litigation, and yet, despite the fact that we have substantially stated this we still want to manufacture in that way. (Trans. p. 119).

Cleveland had seen an old Simonson turner in which the Boss passed through the shaft. (Trans. p. 164).

Thomas, in speaking of Defendant's Exhibit 26, said that there was not much to chose with the arms alone but when it is assembled into the machine with long enough hub to give the same strength that

the arm has on Exhibit 26 and that hub having a bearing on each side, having two bearings on the plate, on each side of the longer hub, I should say this construction was stronger. I think the whole structure in this Defendant's Exhibit 28 would be stronger than the arm shown in Defendant's Exhibit 26 if combined in such a structure as shown in Defendant's Exhibit 27. (Trans. 78).

The legal presumption of validity which accompanies the granting of a patent is impaired in the present instance, not only by the failure of the patent office to cite any references, but also by the fact that the patent was granted upon an inadequate showing of the actual state of the prior art. Upon the showing now made it is hardly conceivable it would have allowed claim 12. It would have demanded, of course, some showing of the patentable quality in the subject matter defined by that claim but there was none to offer. The patentee, Cleveland, in reference to claim 12, even today, when he has another opportunity presented to him, for making such showing, cannot make it. In his deposition, (Trans. p. 160), he testifies that the advantages he proposes to secure by the changed construction was to get a stronger and more symmetrical machine by making the arm bifurcated and thereby having a more substantial bearing on the shaft and stronger arm and having the shaft bearing on the bed-plate in direct line with the center of the cylinder, which construction was better to withstand the thrust of the cylinder. It is to be noted, of course, that the construction which he refers to, insofar as it was intended to withstand the thrust of the cylinder, is identical with the construction

shown in Defendant's Exhibit 27, (Supp. Trans. p. 6).

On cross examination he testified as follows:

Q. Did you introduce any new principle of operation into the Simonson log turner by your invention, so far as it is defined in claim 12?

A. I do not think that a new principle was introduced, as I understand it, by my invention. My improved log turner so far as defined in claim 12, turned the log in the same way as the old Simonson turner, but by a mechanism, which I regard as better. (Trans. p. 162).

Plaintiff's expert, Mr. Hines, confirms Cleveland's testimony as follows:

Q. Can you point out any difference between this Exhibit 26 and Exhibit 27 other than mechanical variation? Is there any difference in principle in the operation of the two machines?

A. They operate substantially in the same way. You can take this machine, and if you are given a good designer, build a design of that and find out what is wrong and correct in here and there. Yes, you can get a machine that will work and turn your logs. (Trans. p. 120).

Hansen's only reason for preferring the Cleveland type is that the bifurcated arm gives better strength and the whole thing looks more symmetri-

cal, neater, more mechanically constructed, according to his notion. (Trans. p. 134).

It is true that Hines testified that in his opinion the cost of constructing the machine shown, (Defendant's Exhibit 27), would be about Fifty Dollars more than the cost of the machine shown in Defendant's Exhibit 26. He did not attempt to itemize this cost by stating what the actual cost of the bed-plate would be and the actual cost of two bearings on the arm instead of one. However, it can be safely assumed that the larger item of this cost would be in the additional casting required by the bed-plate and as we have stated before, the question of type of bed-plate used is not in issue in this case. It is apparent to most anyone that the use of one additional bearing would be very slight and this is emphasized by the fact that both the Allis-Chalmers Company and the Sumner Iron Works, in machines which they now build, have installed two bearings instead of one, upon the push arm. The additional expense of this extra bearing must be rather slight in view of the fact that this additional bearing is placed upon the shaft in order to afford a more convenient location for the nigger. It must be remembered that bearings are scattered along this shaft according to the size of the machine. In Demangeon's testimony, (Trans. p. 146), he states that a shaft ordinarily requires one, two or three bearings, dependent upon the length of the logs to be handled. That would make in the case of the Cleveland bed-plate, five bearings on it. In the case of the straight arm type there would be seven required.

However, the question whether there is any ad-

vantage of a bifurcated arm over a straight arm is foreign to the issue. The issue is limited to a bifurcated arm straddling a bearing. No evidence of advantage resulting from the arm or combination claimed by Cleveland is offered. The Plaintiff's expert, Mr. Hines, continually admits that such combination is no better than that shown in Defendant's Exhibit 27, except in respect to cheapness of construction, (Trans. p. 121), which the authorities hereinafter cited will show to be unpatentable.

Plaintiff's expert, Mr. Hansen, testifies in effect that Defendant's Exhibits 26 and 27 are substantially mechanical equivalents. (Trans. pp. 124-125).

Counsel for the Appellant intimates in his brief that the Sumner Iron Works copied the Cleveland design in the making of their log turner and quotes quite extensively from the evidence of Mr. Sumner upon this point. However, we submit that Mr. Sumner's testimony shows conclusively that he did not copy the Cleveland device but that the machine built by the Sumner Iron Works was a gradual development of their knowledge of log turners by observation and practical working. Mr. Sumner testifies as follows: (Trans. p. 34).

"I have never seen anything of the turners as built by Geddings and Lewis at the time we were making our changes. I have seen some of their printed matter, but the straight bed came to my mind for the reason that—I think it was in 1906—I think it was in 1906—I was up to the Frazer mill figuring on a job. They were going to rebuild the whole mill, and the old

turner, I don't want this word Simonson to apply to that particular machine, but that type of machine; there was one of those old turners taken out of that old mill, and afterwards sold and went up to the Port Moody Mills; that was back in 1906 or '07; that had the straight bed; the beds had never broken; that naturally brought the straight beds to our attention. And then, while I would say that our arm resembles the push-arm and the hook-arm, resembles that a great deal, we made the same mistake there that we were trying to avoid in the crooked bed. That very same turner has gone on, and you might say improved the old Simonson crooked bed; but what has it done? It has transferred that weak point to the arm; the point that is weakest in the whole machine. It is weak today. That is why we today have trouble with the arm, because the breakage is too great. I call to mind a part of the Cleveland deposition that said with divided bed the chances for shrinkages and poor castings were greater, but he has transposed it from that to the arm, the part that should be the most substantial. So, as far as bifurcation is concerned, go back to the horse drawn wagon, it has bifurcated thills. I presume the old chariot would show bifurcation; something as old as mechanics; it seems to me, taking two old ideas and putting them into one, no invention there, no inventive genius demonstrated." (Trans. pp. 34-35).

"I never had seen one of the Cleveland turners but I *presume* I had seen some of their literature. I wouldn't say that I hadn't, or I

wouldn't say that I had, because that is taking too much from memory, but I never had seen anything of their turners." (Trans. p. 36).

The earliest date he attempted to fix for knowledge of the Cleveland patent is that of August 20th, 1920, which is the date which appears on a report from patent attorneys, Siggers & Company, in Washington, D. C. (Defendant's Exhibit 21) (Trans. p. 36).

"We had been very careful not to, what would be termed, pirate on the trade, that is, steal some other manufacturer's ideas or designs. We claim that we build today the best and the most complete line of sawmill and shingle mill machinery that is built in the world, more modern, and we have tried to build it up by our own efforts, and attention and opportunities in the past and have been very careful to not try and steal someone else's ideas, and I might say in forty years we have been in business, this is the first time we were ever in court on infringement of a patent. We have endeavored to keep away from that, and, well, play the game fair, you might say, in business." (Trans. page 38).

Q. Did you receive any advice or notice from the plaintiff that you were infringing the Cleveland patent in suit?

A. Yes, I think we had a letter shortly, I would imagine shortly after the Murray people had purchased the patterns and drawings, and whatever it was from the Geddings & Lew-

is people, and saying that—calling to our attention that we were infringing, and I think we answered them back and cited the information that we had from Washington, and I would imagine that that was two or three or four years ago, sometime ago anyway; and I think that was the last that we ever heard from them until the action was commenced on this turner down here at—here in Oregon. (Trans. page 39).

On cross examination Mr. Sumner testified:

“To the best of my knowledge, as I remember it, the only time I have seen a log turner built along the lines of the Cleveland patent, was one that I was looking at down at Eureka, built and furnished by the Allis Manufacturing Company, who I understand are building under license with these people. I think that was—well, it was during this year. I couldn’t, without referring to some of my notes, expense accounts or something like that, designate the date. Now this—just let me think a minute, I think our records show that the Allis people have furnished six log turners built under the the license which they have from Murray and I am almost positive that the turner at Doliber-Carson, in Eureka, is the only turner that I have ever seen, built like the Cleveland.” (Trans. page 69).

There is no evidence to show that anyone connected with the defendant had any knowledge of the plaintiff’s machine when after a fire in 1913, which destroyed all their old patterns and everything

else, the Sumner Iron Works began to make changes in their line of manufacture. (Trans. page 32).

The evidence is all one way that the Sumner Iron Works *did not copy the device of plaintiff's patent*. Mr. Sumner above sets forth:

"I *presume* I have seen some of their literature. I wouldn't say that I hadn't or I wouldn't say that I had." (Trans. page 36).

What that literature, if anything, disclosed, does not appear. No serious attempt was made on behalf of plaintiff to find out on cross examination what the literature contained or that it had anything to do with the subject of the Cleveland patent in general or of claim 12 thereof in particular, which is the only one sued on.

We believe that the whole testimony upon this subject will satisfy this Court that the Sumner Iron Works, aided only by knowledge it possessed of the log turner shown in Defendant's Exhibit 27, and by general knowledge of mechanics as well as intimate knowledge of mechanics to the particular art to which it relates, did actually produce a duplicate of the machine described in the Cleveland patent. In other words, *defendant's machine is evidence in itself that it required nothing but mechanical skill and knowledge of the prior art to produce plaintiff's identical machine*. (See *Atlantic Works vs. Brady, In Fra*). After having so produced and having adopted the construction complained of in this suit, Defendant, Sumner Iron Works was committed to it temporarily but not because it was a form of machine which commanded their preference. On

the contrary the machine as shown in Defendant's Exhibit 22 and as shown in Defendant's Exhibit 31, is the one the Sumner Iron Works now makes.

The reason for the Defendant, Sumner Iron Works, adhering to the type of machine complained of was not only that it was a machine of their own production which they believed and were advised they had a right to use, but they were committed to it by their adoption directly after their fire in 1913. (Trans. page 32).

It was not until after the purchase of the Cleveland patent by plaintiff on March 30th, 1917, that they were advised that plaintiff held it to be an infringement of the Cleveland patent.

Witness Sumner testifies:

"It is a great expense to stop and abandon all of these patterns and jigs and drawings and bring out something new." (Trans. page 63).

This is an obvious fact and one in which in general the Court may take judicial notice.

It took seven years to make the change from the crooked bed to the straight bed. The first new type of machine was built and installed at Tacoma in the year 1923. (Trans. page 55).

Drawings, specifications and patterns for the same were made, Sumner testified, two years ago, maybe three years. (Trans. page 60).

It would appear nevertheless, that neither party exhibited the soundest judgment in designing this

machine and that the Cleveland machine is no better than an abandoned commercial experiment and that both of the parties have changed the manufacture to a machine not defined in claim 12 of the patent sued on.

Marler, (Trans. 86), Hines, (Trans. 128), Demangeon, (Trans. 143), all testified that the type of machine shown in Plaintiff's Exhibit 19 is the type of machine now being manufactured by the Allis-Chalmers Company, the exclusive licenses of the plaintiff. Hines says that the plaintiff is not now building any machines on account of competition and on account of the defendant's superior freight advantages over the East. They had furnished one for abroad but since acquiring the patent had only manufactured one machine to his knowledge.

The "superior freight charges" alleged by witness to be in favor of defendant, does not deter their licensee, the Allis-Chalmers Company, from selling their machines on the West Coast.

The Sumner Iron Works is now constructing the log turner shown in Defendant's Exhibit 22. (Trans. page 58). In respect to the differences of claim 12 of the plaintiff, and plaintiff's machine as now built and as shown in Plaintiff's Exhibit 19, we have the testimony of several witnesses as noted below.

Marler testifies, (Trans. page 87), that in the machine shown in Plaintiff's Exhibit 19 *there are two bearings connected with the bed-plate, instead of one.*

This is clear from the exhibit itself as well as from the testimony of all witnesses.

Cleveland insists in his deposition, (Trans. 165) upon the advantage of one bearing on the bed-plate instead of two, but plaintiff's expert, Hines states:

"I think myself that this construction here is the greatest advantage there is to the Cleveland patent; but it does not come up in this case, as *this is an afterthought and is not in claim 12.*" (Trans. 130-131).

Mr. Sumner, on behalf of the defendant, testified, in speaking of Defendant's Exhibit 22, being the machine which the Sumner Iron Works is now manufacturing, that the hook-arm and the push-arm is more substantial because the curves have been eliminated. And that is why they changed the bed because they have had so many breakages and undoubtedly the construction shown in Exhibit 22 overcomes these objections. (Trans. 50).

In Exhibit 22 the bearings of the bed-plate are outside of the push-arm bearings. Thus it appears that the defendant has abandoned the construction against which the infringement is alleged and in doing so located the cause of the breakage of the bed-plates and greatly relieved it. (Trans. 151-152).

ARGUMENT AND AUTHORITIES

The District Judge in his opinion deciding this case in the Court below aptly and succinctly stated what we believe to be the law of this case, when he said the Cleveland patent did not "involve invention or patentable novelty since there is no substantial

change in function, operation or result." Log turners operating in the same way were old in the art at the time that Cleveland made his application for a patent. Cleveland, himself, as well as all of the witnesses, admits that the operation of the Cleveland machine was substantially the same as that of the Simonson machine. Cleveland, himself, says that the purpose of his adoption was to get a wider bearing on the rock shaft so that his device would better withstand side shocks, and to build a machine having a stronger arm, either for the push-arm or hook-arm, and this he accomplished by having two bearings on the shaft in the place of one, or bifurcating the lower end of the arm. He also claimed that by putting the bearing at the end of the bed-plate in which the shaft rotated, in a center line with the cylinder, that he relieved certain of the strains upon the bed-plate. There is no claim upon the part of Mr. Cleveland or of any of the witnesses in this case, that the Cleveland machine functioned in any different way or turned the logs any more effectively (which is the only purpose of the machine) than the old Simonson turner.

At that there is a serious conflict of testimony as to whether Cleveland's idea, as embodied in his claim 12, made a stronger or better machine than the old machines, especially the old machine with the straight bed, illustrated by Defendant's Exhibit 27, shown on sheet 6 of the Supplemental Transcript. As to the wider bearing upon the shaft, Cleveland admits that he had seen a solid boss in which the shaft passed through on an old Simonson turner. (Trans. page 164).

There was convincing testimony to the effect

that this boss would give as wide a bearing on the surface of the shaft as the two bifurcated bearings. The boss is shown in evidence by Defendant's Exhibit 28, a wooden model of the push arm. If this arm should be inserted in the old machine, (Defendant's Exhibit 27), the boss would set on the rock shaft between the two bed-plate bearings and there was much testimony to the effect that the utility in operation of this machine would be at least equal to that of Cleveland's. Certainly its plan of operation would be identical.

Let us take a portion of the prior art (Defendant's Exhibit 27), with the arm and boss inserted. Cleveland reduced the two bed-plate bearings to one in the center, converting the boss to two bearings straddling the bifurcated arm in the center. This could not have been an invention in respect to the hook-arm for these arms had been bifurcated a long time before. Nor was it in respect to the push-arm. It was merely a re-arrangement of three old bearings, accompanied by an old bifurcation, calculated to turn logs in the same old way.

We contend, however, that the testimony does not establish in this case that the Cleveland type of turner was stronger than the old type. The plaintiff emphasizes its ability to stand side shock. Mr. Sumner points to actual experience of breakages of the shoulder of the bifurcated arms. He says that taking the twist out of the bed-plates was good mechanics but putting it in the arm was bad. The strength of Mr. Sumner's testimony lies in this admission of his own past mistakes.

Both Allis-Chalmers and the Sumner Iron Works

have abandoned the form of bifurcation existing in the Cleveland model. Both have abandoned the push-arm of the Cleveland machine. Allis-Chalmers retains it in the hook-arm. Some testimony was given that this change was made in order to permit the operation of a Hill nigger between the forks of the push-arm. However, as we have heretofore pointed out if this bifurcated arm straddling a single bearing was so much stronger than the straight arm with two bearings on the shaft, both of these manufacturers could easily have retained this type and placed the Hill nigger in another position outside of the arms where it would be just as effective as it would if it passed through the fork of the arm.

Without superior utility there can be no patent ability in a device improving upon earlier machinery and even if it had the patentability is impossible unless a new plan of operation is introduced. No novel operation with shown with respect to the Cleveland machine. We believe the patent in issue cannot be upheld for the reason as stated by the Court below—"that its function, operation and result is substantially the same as that shown in the old Simonson machines."

The straight bed-plate of the Cleveland patent, with a bearing on the shaft was old in the art. Whether there was one bearing or two would without question be a matter of mechanical change or judgment. The bifurcation of an arm was old in the art at the time of the Cleveland patent as well as the straddling of the bearing, by means of bifurcation.

In the case of Gilchrist vs. Mallory, 281 Fed.,

30, the only case cited by the Court below, it is held that the superior utility of a patent device is not conclusive as to its patentability and that a combination whose elements are old in the art is not patentable if the elements produce no new function and don't produce any new result. Further than this, this case is particularly in point, because it involved the question of the patentability of integral or non-integral parts.

Mr. Cleveland cannot and indeed does not claim that his patent is a pioneer patent in this art. He only claims to improve the old type of machine. For this reason Cleveland's patent should receive a strict construction. A pioneer patent has been defined in *Morely Machine Co., vs. Lancaster*, 129 U. S. 263, 273, as follows:

“Morely, having been the first person who succeeded in producing an automatic machine for sewing buttons of the kind in question upon fabrics, is entitled to a liberal construction of the claims of his patent. He was not a mere improver upon a prior machine which was capable of accomplishing the same general result; in which case, his claims would properly receive a narrow interpretation. This principle is well settled in the patent law, both in this country and in England. Where an invention is one of a primary character, and the mechanical functions performed by the machine are, as a whole, entirely new, all subsequent machines which employ substantially the same means to accomplish the same result are infringements, although the subsequent machine may contain improvements in the separate ma-

chanisms which go to make up the machine.”

Mr. Cleveland’s patent, if valid at all, would be a mere improvement patent such as is defined in *Winans vs. Denneed*, 15 Howard 330, 341, as follows:

“Patentable improvements in machinery are almost always made by changing some one or more forms of one or more parts, and thereby introducing some mechanical principle or mode of action not previously existing in the machine, and so securing a new or improved result.”

It has been frequently held that pioneer patents are entitled to a liberal construction. *McCormick vs. Talcott*, 20 Howard 402; *Sessions vs. Romadka*, 145 U. S. 29. On the other hand improvement patents receive a strict construction. *Rich vs. Baldwin*, 133 Fed. 920; *Sharp vs. Ballinger* 168 Fed. 295.

In the case of *Atlantic Works vs. Brady*, 170 U. S., 192, Justice Bradley in an opinion which he became a classic, sets forth some of the distinctions between invention and natural advancement and mechanical skill, in the following forceful and instructive language:

“The process of development in manufactures creates a constant demand for new appliances, which the skill of ordinary head workmen and engineers is generally adequate to devise, and which, indeed, are the natural and proper outgrowth of such development. Each step forward prepares the way for the next, and each is usually taken by spontaneous trials

and attempts in a hundred different places. To grant to a single party a monopoly of every slight advance made, except where the exercise of invention somewhat above ordinary mechanical or engineering skill is distinctly shown, is unjust in its principle and injurious in its consequences. The design of the patent laws is to regard those who make some substantial discovery or invention which adds to our knowledge and makes a step in advance in the useful arts. Such inventors are worthy of all favor. It is never the object of those laws to grant a monopoly for every trifling device, every shadow of a shade of an idea, which would naturally and spontaneously occur to any skilled mechanic or operator in the ordinary progress of manufacture. Such indiscriminate creation of exclusive privileges tends rather to obstruct than to stimulate invention. It creates a class of speculative schemers, who make it their business to watch the advancing wave of improvement, and gather its foam in the form of patent monopolies which enables them to lay a heavy tax on the industry of the country without contributing anything to the real achievement of the arts. It embarrasses the honest pursuit of business with fears and apprehensions of concealed liens and unknown liabilities to lawsuits and vexations accounting for profits made in good faith."

Conceding, for the purpose of argument, that the Cleveland log turner shows an improvement over the Simonson turner, this improvement was not patentable in view of the fact that the Cleve-

land turner operates in the same way as the Simonson turner and produces the same result.

In the case of *Western Electric Co. vs. Ansonia Brass Co.*, 114 U. S. 447, 451, the Court said:

“The Olmstead patent, therefore, covers an old process applied to the same subject, with no change in the manner of applying it, and with no result substantially distinct in its nature. It cannot, therefore, be a valid patent.”

In the *Packing Company Cases*, 105 U. S. 566, 571, Mr. Justice Woods said:

“All improvement is not invention, and entitled to protection as much. Thus to entitle it, it ought to be the product of some exercise of the inventive faculties, and it must involve something more than what is obvious to persons skilled in the art.” (citing cases).

In *Gardner vs. Herz*, 118 U. S. 180, 189, the court adopted language of the District Court as follows:

“Gardner merely applied a process that was old to a material that was old, to obtain an old form. Considered as a combination, it is hardly possible to believe that the perforations or the concavity performed any new functions in the Gardner seat. An ingenious feature has been presented, to the effect that the perforations and concavity co-operate, in Gardner’s seat, to prevent warping and curling of the ma-

terial used. If this is true, the same elements were combined in the Baillie chair-back and performed there the same functions they performed in the Gardner seat. It may be that the Gardner seat is mechanically a better seat than any which preceded it, but his improvement is not a patentable one. * * * *

In conclusion, in view of the former decision of this court, the complainant can only succeed upon the theory that, by imparting a concave form to his chair-seat, he has imparted sufficient patentable novelty to his article to sustain a patent; and this when such a form of chair-seat was old, the material used was old, and the method of imparting the form to the material was old. This theory cannot stand.
* * * *

The statute makes novelty and utility the only test of patentability. * * * * Unless substantially the same thing existed before, the article, if useful, is new and patentable. * * * *

On the other point presented it was said in *Thompson vs. Boisselier*, 114 U. S. 1, 11, that, under art. 1, sec. 8, subdivision 8 of the Constitution a patentee must be an inventor and he must have made a discovery; that the statute has always carried out this idea, referring to Sec. 6 of the act of July 4, 1836, 5 Stat. 119, and Sec. 24 of the act of July 8, 1870, 16 Stat. 201, and Sec. 4886 of the Revised Statutes; that 'it is not enough that a thing shall be new, in the sense that, in the shape or form in which it is produced, it shall

not have been before known, and that it shall be useful, but it must, under the Constitution and the Statute, amount to an invention or discovery." A large number of cases in this court were there referred to, and one especially, where the thing claimed was new, 'in the sense that it had not been anticipated by any previous invention, and it was shown to have superior utility, yet it was held not to be such an improvement as was entitled to be regarded in the patent law as an invention.' A case to the same effect at this term is *Yale Lock Mfg. Co. vs. Greenleaf*, 117 U. S. 554."

The distinction between mechanical improvement and patentable novelty is, of course, more or less indefinite, but the courts have laid down many principles for guidance.

In *Hollister vs. Benedict*, 113 U. S. 59, 70, 72, 73, holding unpatentable an improvement in the form of revenue stamps, the Supreme Court defined mechanical improvements in the following terms:

"In reaching this conclusion we have allowed its due weight to the presumption in favor of the validity of the patent arising from the action of the Patent Office in granting it; and we have not been unmindful of the fact, abundantly proven, and indeed not denied, that the adoption of the present taxpaid stamp, in lieu of that previously in use by the Internal Revenue Bureau, has proven its superior utility in the prevention of frauds upon the revenue. * * * *

Such an increased utility, beyond what had been attained by devices previously in use, in cases of doubt, is usually regarded as terminating the question of invention. But in the present case we are not able to give it such effect

* * * * *

It is but the display of the expected skill of the calling, and involves only the exercise of the ordinary faculties of reasoning upon the materials supplied by a special knowledge, and the facility of manipulation which results from its habitual and intelligent practice; and is in no sense the creative work of that inventive faculty which it is the purpose of the Constitution and the patent laws to encourage and reward."

In the case of *American Road Machine Co. vs. Pennock Co.*, 164 U. S. 26, 41 the Supreme Court said:

"Did increasing the weight of the hand-wheels in this class of road machines, in order to correct the tendency of smaller wheels to reverse, involve patentable novelty?

We do not think so. The use of hand-wheels as a substitute for straight levers in this class of machinery was old, and whether the wheels were light or heavy, (and heavy wheels were old), they alike performed the service of rotary levers. * * * * To make the hand-wheels heavier was to increase their capacity, but the same end was accomplished by substantially the same means. The means were

old, and their enlargement by a common method to attain a better result in the particular instance merely carried forward the original idea, and was nothing more than would occur to the experienced mechanic. * * * *

The substitution of the heavier wheel was not the product of a creative mental conception, but merely the result of the exercise 'of the ordinary faculties of reasoning upon the materials supplied by a special knowledge, and the facility of manipulation which results from its habitual and intelligent practice.'

In the case of *Sloan Filter Co. vs. Portland Gold Min. Co.*, 39 Fed. 23, 26, a patent exhibited the correction of a defect in a machine through mechanical ingenuity and was held invalid, the Court saying:

"The result of the application of the common skill and experience of a mechanic, which comes from the habitual and intelligent practice of his calling, to the correction of some slight defect in a machine or combination, or to a new arrangement or grouping of its parts, tending to make it more effective for the accomplishment of the object for which it was designed, not involving a substantial discovery nor constituting an addition to our knowledge of the art, is not within the protection of the patent law."

It is the contention of the defendant that the Cleveland log turner is substantially equivalent to the Simonson turners, because it operates in the

same way to do the same work. This is no less true if the court would be of the opinion that the Cleveland machine is a sturdier one and mechanically better, although this not admitted by defendant. The courts have defined mechanical equivalency and mechanical difference.

In *Machine Company vs. Murphy*, 97, U. S. 120, 125, the Court had the following to say of mechanical equivalency:

“Nor is it safe to give much heed to the fact that the corresponding devices in two machines organized to accomplish the same result is different in shape or form the one from the other, as it is necessary in every such investigation to look at the mode of operation or the way the device works, and at the result, as well as at the means by which the result is attained. * * * *

Authorities concur that the substantial equivalent of a thing, in the sense of the patent law, is the same as the thing itself; so that if two devices do the same work in substantially the same way, and accomplish substantially the same result, they are the same, even though they differ in name, form or shape. Curtis, Patens (4th ed.) Sec. 310.”

In *Stephenson vs. Brooklyn R. R. Co.*, 114 U. S. 149, 154, the Supreme Court said:

“We find, therefore, that none of the separate elements of the devices described in the O’Haire patent are new, nor is the combination new. So far, therefore, we find no

patentable invention in the contrivance described in the patent under consideration. It was said by the court in *Smith vs. Nichols*, 21 Wall, 112, that a 'mere carrying forward a new or more extended application of the original thought, a change only in form, proportions or degree, the substitution of equivalents doing substantially the same thing in the same way by substantially the same means, with better results, is not such invention as will sustain a patent.' So in *Pennsylvania Railroad vs. Locomotive Truck Co.*, 110 U. S., 490, Mr. Justice Gray, delivering the opinion of the court said: 'The application of an old process or machine to a similar or analogous subject, with no change in the manner of application and no result substantially distinct in its nature, will not sustain a patent, even if the new form of result has not before been contemplated. These authorities are pertinent. See also *Vinton vs. Hamilton*, 104 U. S. 485; *Blake vs. San Francisco*, 113 U. S. 679.

Vinton vs. Hamilton, 104 U. S. 485; *Blake vs. San Francisco*, 113 U. S. 679."

The mechanical difference between the arm and bearings of the Simonson turner and those of the Cleveland turner is that the latter are bifurcated, that is double made—in two parts. The courts have frequently determined that dividing an integral part or uniting several parts in one represents mechanical skill only.

In the case of *Howard vs. Detroit Stove Works*, 150, U. S. 164, 170, the Court said:

“As to the third patent, it is void because the claims in it were clearly anticipated, and because it involves no invention to cast in one piece, an article which has formerly been cast in two pieces and put together, nor to make the shape of the grate correspond with that of the firepot.”

General Electric Co. vs. Yost Electric Co., 139 Fed. 568, 570, the Court said:

“The prior art shows and the patent admits that such a lining in two pieces was old. That it does not involve inventions merely to make such a lining in one piece is well settled. *Howard vs. Detroit Stove Works*, 150 U. S. 164, 14 Sup. Ct. 68, 37 L. Ed. 1039 *Standard Caster & Wheel Co. vs. Caster Socket Co.*, 113 Fed. 162, 51 C. C. A. 109. Nor would the mere fact that the one-piece device was cheaper or more durable, constitute invention, when such results were merely such ordinary consequences of dispensing with joints as would naturally be anticipated by the workman. *Manufacturing Co. vs. Holtzer*, 67 Fed. 907, 15 C. C. A. 63. In *Standard Caster N Wheel Co. vs. Caster Socket Co.*, supra, the Court says:

“In *Manufacturing Co. vs. Holtzer*, 67 Fed. 907, 15 C. C. A. 63, the Circuit Court of Appeals for the First Circuit held that the right to improve on prior devices by making solid castings in lieu of attached parts is so common and universal in the arts as to cast a heavy burden upon anyone claiming patentability for such an

improvement to show special reasons in support of his claim."

In the case of *Gates Iron Works vs. Overland Gold Min. Co.*, 147 Fed. 700, 703, it was held that making a hopper out of two parts was equivalent to making it all in one piece and constituted mechanical improvement only:

"The hopper formed of two angular sections does not alter the operation of the crusher, but in that respect performs the same function in the same way as did the hopper cast in a single piece, or formed of sections, separated by radial lines and bolted together, so the claim to invention lies entirely in so dividing the hopper and supporting the outer sections that the inner section overlying the spider rim may be handled, put in place, and lifted out of place independently of the other. Was this more than the employment of obvious mechanical expedients which would naturally occur to a skilled mechanic, or engineer in the intelligent practice of his calling? We think it was not. To divide into parts what cannot be conveniently handled as a whole, is elementary, if not instinctive, and to make the division of circular objects along circular lines has long been common."

A change of form or of the arrangement of parts in a machine is a mechanical improvement and is not patentable, even though it involves actual improvement and makes the device more useful.

In *Curtis vs. Overman Wheel Co.*, 58 Fed. 784,

786, the Court held invalid an improvement in a bicycle pedal, saying:

“After the use of the old fluted or corrugated, double rotary pedals, with their narrow and partially rounded faces, which were not wide enough to secure the proper leverage, the broadening or widening of the working surfaces was a suggestion which was most natural and did not rise to the dignity of the invention.”

In *Lettelier vs. Mann*, 91 Fed. 909, 911, the Court said:

“The evidence satisfies me that complainant’s patent possesses advantages over the Weston machine in all the particulars mentioned, except as to the shoulders, about which there is doubt; but I am likewise satisfied that the Weston machine was successfully operated.

* * * *

Complainant has cited a great number of cases, involving changes of location, wherein the patents have been sustained. In most, if not all, of those cases, however, the improvements held to be patentable were believed by the court to involve something more than mere structural changes.”

In *Smith vs. Nichols*, 21 Wall. 112, 118, the Court said:

“A patentable invention is a mental result. It must be new and shown to be of practical

utility. Everything within the domain of the conception belongs to him who conceived it. The machine, process, or product is but its material reflex and embodiment. A new idea may be ingrafted upon an old invention, be distinct from the conception which preceded it, and be an improvement. In such case it is patentable. The prior patentee cannot use it without the consent of the improver, and the latter cannot use the original invention without the consent of the former. But a mere carrying forward or new, or more extended application of the original thought, a change only in form, proportions, or degree, the substitution of equivalents, doing substantially the same thing in the same way by substantially the same means with better results, is not such invention as will sustain a patent. These rules apply alike, whether what preceded was covered by a patent or rested only in public knowledge and use. In neither case can there be an invasion of such domain and an appropriation of anything found there. In one case everything belongs to the prior patentees, in the other, to the public at large."

The use of a bifurcated arm straddling a bearing appears at the time of the Cleveland patent, to have been old in the art of machinery construction, even if not in that of log turning machinery. It is not patentable invention, however, to adopt from the general machinery art, this device and incorporate it in a log turner, especially in view of the fact that the Cleveland log turner produced thereby, turns logs in substantially the same way as the Simonson turner.

In the case of *Brown vs. Piper*, 91 U. S. 37, 41, a patent for a fish preserver was held invalid by reason of a former patent for a corpse preserver, both embodying a chamber kept below freezing. It was contended that these were different arts but the Court said:

“The answer is, that this was simply the application by the patentee of an old process to a new subject, without any exercise of the inventive faculty, and without the development of any idea which can be deemed new or original in the sense of the patent law. The thing was within the circle of what was well known before, and belonged to the public. No one could lawfully appropriate it to himself, and exclude others from using it in any usual way for any purpose to which it may be desired to apply it.”

The above case has been cited on the same proposition time and again and the court is referred to 8 Rose's Notes 959. We quote from the case of *Fitzgerald Meat Tree Co., vs. Nelson Norris & Co.*, 142 Fed. 763, 765:

“The idea of hanging cuts of meat so as to permit a free circulation of air around each cut during the process of smoking, was old. Suspendable meat trees were old. The display rack of the construction shown in this patent was old. A mere increase of the size, weight, or strength of a device so that it can be adapted to analogous use is not invention. A patent for preserving fish in a close chamber, by means of a freezing mixture, having no con-

tact with the atmosphere of the preserving chamber, was held invalid as the adoption of an old process to a new subject; the prior art showing a patent for a similar process in preserving bodies before interment. *Brown et al vs. Piper*, 91 U. S., 37, 23, L. Ed. 200. Revolving castors being old, the Supreme Court in *St. Germain vs. Brunswick*, 135, U. S. 227, 10 Sup. Ct. 822, 34 L. Ed. 122, held there was no invention in constructing a revolving billiard cue rack. The combination in a savings bank of an inwardly extending tube and a circular row of integral teeth on the inner end of said tube, designed to prevent the withdrawal of paper money from said bank, has just been held by the Circuit Court of Appeals for this circuit in the case of *Burns Co. vs. Mills et al.*, 143 Fed. 325, to be the product of mechanical skill, and not invention in view of a similar mechanical form in animal traps. Surely the transformation of the familiar display rack to the meat tree, the adaptability of which to the use of hanging meats ought to suggest itself at once to any one knowing the need of such a meat tree, cannot be said to involve the inventive faculty, which is denied to the evolution of the rat trap into a saving bank."

The file wrapper of the Cleveland patent shows that the patent was granted as first applied for. The file wrapper is not an exhibit in this case, but it is conceded by counsel for Appellant that it contains no references. We have heretofore cited a number of cases holding that while a pioneer patent is liberally construed by the Courts in order to sustain the patent, a patent upon an improvement of

an old machine, is strictly construed. In addition to this we maintain that the presumption of validity which arises from the granting of the patent is seriously weakened by the failure of the file wrapper to show any references.

In the case of *American Soda Fountain vs. Sample*, 130 Fed. 145, 149, the Court uses the following language:

“We do not agree with the contention that the file wrapper discloses the patent to have been granted as first applied for, without any references, adds any force to the presumption of novelty arising from the grant. On the contrary, we think the force of that presumption is much diminished, if not destroyed by the lack of any reference by the examiner to, or consideration of, the ‘Clark’ patents. It does not seem likely that an expert examiner would pass them by without notice or consideration, if they had been called to his attention. We feel compelled, therefore, to the conclusion that the first and fifth claims of the patent in suit, are invalid for want of patentable novelty.”

Where the Patent Office failed to cite or consider pertinent references, the presumption of validity from grant of patent is seriously weakened.

American Can Co. vs. Goldee Mfg. Co., 290 Fed. 523, Citing *Cordley vs. Richardson Corp.*, 278 Fed 685, affirmed (2 C. C. A.) 280 Fed. 515.

See also:

Westinghouse Elec. Mfg. Co., vs. Toledo P. C. & Ry., 172 Fed. 371, 392. Elliott & Co. vs. Youngstown Car Mfg. Co., 181 Fed. 345, 349. Wm. B. Scaife & Sons Co. vs. Fall City Woolen Mills Co. 194 Fed. 139, 145.

The presumption of validity arising from the granting of a patent by the patent office is a mere rule of evidence which cannot usurp the judgment of a court.

“The presumption referred to is something defined to mean that the patent itself is prima facie evidence of novelty and of invention, but that presumption is probably a mere rule of evidence, which casts the burden of proof upon the alleged infringer. This presumption cannot usurp the province of the court to declare what constitutes novelty. The courts should give due consideration to the action of the patent office, but should not permit that action to control its deliberate judgment when it is manifest there is not invention. *Hollister vs. Manufacturing Co.*, 113 U. S. 59-71, 5 Supt. Ct. Rep. 717.”

J. J. Warren Co. vs. Rosenblatt, 80 Fed. 540-543.

“The patent office, however, has generally issued a patent to anyone who produced a device not before known, unless it was considered reasonably clear that such device did not involve invention. Therefore, in finding a remedy for the evils above stated, the courts have held invalid a large percentage of litigated patents.”

It must be conceded in this case that bifurcated arms straddling single bearings are old in mechanics and that bed-plates, straight and crooked, were old in mechanics at the time Cleveland made his application for a patent. Indeed the Appellant's counsel does not seriously controvert any of these statements. The basis for his claim for patentability seems to be solely based upon the fact that he tapered the straight bed-plate toward the front end and bifurcated the push arm so that it would straddle the bearing and it is this combination of old elements which he claims make the invention patentable. The straight bed-plate shown in defendant's exhibit, 27, could be easily designed by an offset in the side frames so that the push arm could straddle a single bearing. However, in the attempt to make this push arm straddle the single bearing, Cleveland tapered his bed-plate to a point at the front end. This seems to us is only such a construction as would occur to any ordinary mechanic, who desired to install a bifurcated push arm, straddling a single bearing. It was simply a combination of old elements which didn't produce any new results. We freely admit that an invention may embody old elements, but to be patentable it must produce some new or different result. This is not the case here, for this arm functions in the same way and produces the same result as was done with the old Simonson turner.

In the case of *Duer vs. Corbin Cabinet Lock Co.*, 149 U. S., 216, the Court uses the following language:

“All that he claims as invention is found in one or more of the prior patents.”

In the case of *Keene vs. New Idea Spreader Co.*, 231 Fed., 701, 708.

“Still, to insist that claims disclose invention or discovery where their substantial equivalency in elements, in mode of operation and results, plainly appear in two or more earlier patents or publications though not all in one patent of publication, is to ignore the very terms of the patent act. Above all, counsel’s theory is opposed to settled course of judicial decision.” (Citing with numerous quotations, U. S. and Fed. cases).

The case of *Huebner-Toledo Breweries Co. vs Matthews Gravity Carrier Co.*, reported in 253 Fed. at page 435, is a good illustration of the distinction which should be constantly kept in mind between the mere advancements of the art and actual invention.

In this case the patent under consideration was for a gravity carrier, consisting of side rails parallel to each other, having rolls between the rails and at right angles thereto made of hollow metal tubing. At each end of this tubing was a cone upon a rod which extended longitudinally through the center or axis of the cone. A cup bearing or track was provided at each end of the roll so as to form a race in which balls were placed so that the rolls had ball bearings, similar to those found in the ordinary bicycle.

In tracing the development of the prior art, the

Court found that each of the elements of the patent carrier could be found in some other article performing a similar function, for example, the ball bearing was referred to as performing the same function that it performed in the bearing of the bicycle. On page 446 is found the following language:

“It must of course be conceded that patentable novelty may exist in a combination of old elements, but here the combination claims in suit are lacking in the usual and essential tests of invention. No new functions of elements or new methods of operation is evolved, and the result achieved is exactly the same as the old one. The settled rule under such facts is that to adapt an old and familiar device to another structure equally old and well known, is not to exercise the inventive faculty; it is to apply the skill of the mechanic.” (Citing numerous cases).

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“It is said appellee’s career is not anticipated by any single patent; but it is not necessary to show complete anticipation in a single patent. *The selection and putting together of the most desirable parts of different machines in the same or kindred art, making a new machine, but in which each part operates in the same way as it operated before and effects the same result, cannot be invention; such combinations are in the nature of things the evolutions of the mechanic’s aptitude rather*

than the creations of the inventor's faculty."

(Citing numerous cases.)

In *W. F. Burns Co. vs. Mills*, 143 Fed. 325 (7 C. C. A.) the Court *held a patent on a savings bank void for lack of invention in view of patent on a rat-trap*. In reaching the conclusion that the patent was void as being the outcome of the mere application of mechanical skill, the Court (page 328) said:

"Saving banks for home use, embodying mechanical means to prevent the coin deposited from being extracted, being old, the sole inquiry in the case under consideration is this: Is the transfer of the tube from the animal trap contrivances to the purposes of a home savings bank, so as to better enable such banks to become depository of bills, patentable invention? Is the conception of a savings bank with such a contrivance the product of inventive imagination?"

In the case of *Knapp et al. vs. Norse*, 150 U. S. 288, the umbrella was considered as a part of the prior art and operated to defeat the validity of a patent issued for a dress form in which rods or ribs were connected near the top and bottom extremities to braces or stretchers, which extended obliquely from the ribs to the standard and were there connected and hinged on small movable collars which encircled the standard, by the rising or lowering of which the form would be caused to expand or contract.

If Cleveland designed anything in the way of an

improved log turner, it was simply the result of mechanical skill. The central idea of his claim seems to be the forked arm straddling the bearing on the rock shaft and in order to effectuate this he tapered his bed-plate and now claims a patent because of the combination, but as we have heretofore said, this seems to us to show but the ordinary skill which a mechanic familiar with the operation of machines would produce. Court's don't extend benefits of the patent law to mere mechanical skill.

In *E. A. McMillian Co. vs. Androscoggin Pulp Co.*, 291 Fed. 134 (Advance Sheets), Judge Hale, for the District Court, S. D. Maine, (page 137) says:

"It is the duty of courts sitting in patent cases to recognize invention when they meet it; but it is also clear that it is their duty not to extend such recognition to mere mechanical skill."

"The present hearing illustrates even more fully that the former hearing the necessity of requiring a patentee to reasonably limit his claims, so that they shall embody and specify elements essential to his actual improvement in the art. The right of a patentee to exclude others from the use of old and familiar mechanical combinations and structures must be carefully restricted. The duty rests upon the court to guard the public against that form of unjust monopoly, which may result from sustaining highly abstracted claims. The language of the Supreme Court in *Carlton v. Bokee*, 17

Wall. 463, 471, 21 L. Ed. 517, should always be in mind.

“ ‘We think it proper to reiterate our disapprobation of these ingenious attempts to expand a simple invention of a distinct device into an all-embracing claim, calculated by its wide generalization and ambiguous language to discourage further inventions in the same department of industry.’

“An attempt to save such claims by a beneficial interpretation is not only contrary to a well-established patent law, but a practical mistake. Patent claims are advisedly made by skilled solicitors, and if they choose to claim abstractions or high generalizations they must stand by them.

“As was said in *American Bell Tel. Co. v. National Tel. Mfg. Co.*, (C. C.) 109 Fed. 1043:

“ ‘The patent statutes requires the patentee himself to claim and define his invention, so that the public may know its right, and so that there shall not be imposed upon the courts the burden of constructing upon a hearing new claims from the interpretations that experts may place upon language of the most sweeping and general character.’

“What is prior art is a matter that cannot be determined arbitrarily, nor merely by a restriction of the claim to a special use.

“If the thing is old, and is applied to per-

form its old function, it remains in the prior art, and cannot be made novel, in the sense of the patent law, merely because used in new surroundings that do not affect its character or mode of operation.”

Robinson v. Tubular Woven Fabric Co., 248 Fed. 526, 541, 542.

The language of the Court in the case of Smith v. Nichols, 21 Wall. 112, 118, seems to us particularly applicable to the case at bar:

“But a mere carrying forward or new or more extended application of the original thought, a change only in form, proportions, or degree, the substitution of equivalents, doing substantially the same thing in the same way by substantially the same means with better results, is not such invention as will sustain a patent. These rules apply alike, whether what preceded was covered by a patent or rested only in public knowledge and use. In neither case can there be an invasion of such domain and appropriation of anything found there. In one case everything belongs to the prior patentee, in the other, to the public at large.”

A 1917 decision of the Supreme Court to the same effect as that last cited, is found in R.R. Supply Co. v. Elyria Iron & S. Co., 244 U. S., 285, 61 L. Ed. 1136.

In Galvin v. City of Grand Rapids, 115 Fed. 511, (6 C. C. A.) the Court, in a decision by Judge Day (page 517), said:

“Lynch carried forward the old idea by a mechanical change in one of the elements which produced better results. Such a change is not patentable. *Guidet v. Brooklyn*, 105 U. S. 550, 26 L. Ed. 1106. ‘Structural changes of form and proportion, although they improve the operation without changing the mode of operation, and produce a much better result, although one of the same kind, are only different and better forms of embodying the same idea, and illustrate the difference between mechanical skill and inventive genius.’ Rob. Pat. Sec. 38, note 1. ‘The law requires more than a change of form, or juxtaposition of parts, or of the external arrangements of things, to give patentability.’ *Reckendorfer v. Faber*, 92 U. S. 347-356, 23 Law. Ed. 719.”

“It must be conceded that a new combination, if it produces new and useful results, is patentable, though all the constituents of the combination were well known and in common use before the combination was made. But the results must be a product of the combination, and not a mere aggregate of several results each the complete product of one of the combined elements. Combined results are not necessarily a novel result, nor are they an old result obtained in a new and improved manner. Merely bringing old devices into juxtaposition, and there allowing each to work out its own effect without the production of something novel, is not invention.”

Hailes v. Wormer, 20 Wall, 353, 368.

In *Goodyear Tire & Rubber Co., et al v. Rubber Tire Wheel Co.*, 116 Fed. 363 (6 C. C. A.), the Court, following their decision in *Overweight Counterbalance Elevator Co. v. Henry Vogt Machine Co.*, 102 Fed. 957, reverses the court below and declares the patent sued on void for want of patentable novelty.

The Court (p. 371), uses the following language:

“Now, if Grant’s construction is an aggregation of well-known parts, each part doing its own appropriate function in substantially the old way, it does not show a patentable invention, even though the sum of all the old results is a tire more serviceable or durable than shown in the old art. *Hailes v. Van Wormer*, 20 Wall, 353, 22 L. Ed. 241; *Office Specialty Mfg. Co. v. Fenton Metallic Mfg. Co.*, 174 U. S. 498, 19 Sup. Ct. 641, 43 L. Ed. 1058; *Richards v. Elevator Co.*, 158 U. S. 299, 15 Sup. Ct. 31, 39. L. Ed. 991; *Overweight Counterbalance Elevator Co. v. Henry Vogt Mach. Co.*, 43 C. C. A. 80, 102 Fed. 949; *Smith v. Nichols*, 21 Wall. 112, 22 L. Ed. 566.”

In *American Laundry Machinery Mfg. Co. v. Adams Laundry Machinery Co.*, 161 Fed. 556, Ray, District Judge (p. 563) said:

“The test of invention is mental conception, not larger sales, or improved results, or benefits conferred on mankind. All these are evidence of invention, but not invention as the Supreme Court of the United States has re-

peatedly decided. To hold that a combination of old and well-known elements in the old way with some modifications to which the skill of the ordinary mechanic skilled in the art is adequate, unless to meet a new and novel exigency, it patentable for the reason the benefit to mankind is valuable and extensive, is to reward every mechanic for exercising his skill, not his mental conceptions, by a monopoly, and is a misconception and works a perversion of the patent laws."

In *Tubelt Co. v. Friedman et al.*, 158 Fed. 430, Judge Ray, for the Circuit Court of New York, (p. 439) said:

"It will not do to find patentable invention in a device or structure where all its elements are found in the prior art, and all the alleged inventor does to produce it is take one of the prior patented devices, and leave out one of its elements and substitute in place thereof a well-known equivalent taken from another device of the same kind, where it was used for the same purpose, operated in the same way, and produced the same results as is required in its new location, and the sole result of the substitution is that the substituted element operates or works a little better than did the displaced one and thereby the operation of the alleged new structure is somewhat improved. This is improvement, but not invention. It may be a successful experiment, but there is no novelty. 'While a combination of old elements producing a new and useful result may be patentable, if the combination is merely the assembling of old

elements producing no new and useful result invention is not shown.' Computing Scale Co. of A. v. Automatic Scale Co., 204 U. S. 609, 27 Sup. Ct. 307, 51 L. Ed. 645. To constitute improvements in invention they must be the product of original conceptions. Pearce v. Mulford, 102, U. S. 112, 118, 25 L. Ed. 93; Slawson v. Grand Street Railway, 107 U. S. 649, 2 Sup. Ct. 663, 27 L. Ed. 576; Munson v. N. Y. City, 124 U. S. 606, 8 Sup. Ct. 622, 31. L. Ed. 586."

In North Jersey St. Ry. Co. v. Brill, 134 Fed. 580, (3 C. C. A.) the Court (p. 584) said:

"The evidence, we think, fairly leads to the conclusion that the patentee, Brill, took the combination of Thyng's patent, but instead of using the latter's form of link, substituted therefor another form of link which had been commonly used for the same or analogous purposes, namely, an elastic or spring-controlled link, the character and function of which were well understood in the art. *This substitution may have secured better results, but it did not involve invention.* Stimson v. Woodman, 10 Wall. 117; 19 L. Ed. 866; Smith v. Nichols, 21 Wall, 112, 22 L. Ed. 566; Pennsylvania Railroad Company v. Locomotive Truck Company, 110 U. S. 490, 4 Sup. Ct. 220, 28 L. Ed. 222; Office Specialty Mfg. Co. v. Fenton Mfg. Co., 174 U. S. 492, 19 Sup. Ct. 641, 43 L. Ed. 1058."

In Bradley v. Eccles, 143, Fed. 621, (2 C. C. A.) the Court held the patent sued on to be void for want of patentable novelty, reversing the Court below as

reported in 138 Fed. 916.

The patent sued on was for a thill coupling in which the invention of said patent consisted in substituting a ball and socket joint in place of a straight bearing joint between the draft eye and the thill iron of a previous patent. The court (p. 522) says:

“Doubtless the change introduced practical advantages into the device of the Hannan patent. We are unable to discover, however, that the substitution involved invention. All that was required was to remove the Hannan coupling-pin and replace it with the ball, and recess the draft-eye so as to afford the corresponding bearing surface, to affect the substitution of a coupling device which was well known in the prior art, and which had long been employed as the joint in thill coupling devices. . . . When *transferred* to the Hannan devices the *ball and socket coupling did simply the same work* which it had done in the previous thill coupling devices, and *did not in the least affect the mode of operation of the other parts of the device*. Its location in its new environment evinced merely good judgment, and the slight changes necessary for the suitable adaptation of the associated parts evinced only ordinary mechanical skill. In short, the patentee invented no new device; he used it for no new purpose; he applied it to an old combination. All he did was to apply it to an old purpose in a different, but old, combination. This does not rise to the dignity of invention. *Mast, Fees & Co. v. Stover Mfg Co., 117 U. S. 493, 20 Sup. Ct. 708, 44 L. Ed. 856.*”

The broadening of the bearing on the rock shaft in Cleveland's patent does not constitute patentability.

In *Streit v. Kaiper*, 143 Fed. 981, (6 C. C. A.) the Court held the patent sued on void for lack of patentable invention in view of the prior art. The Court held that the invention of the patent sued on was (to quote the language of the Court at page 984) :

“a mere question of extent or degree, of an increase of the size of an existing device to more completely fulfill its purpose. The case falls within the rule of which there are numerous illustrations in the reports of the Supreme Court and of this court. Some of these are *Smith v. Nichols*, 21 Wall. 112, 22 L. Ed. 566; *Burt v. Every*, 133 U. S. 349, 10 Sup. Ct. 394, 33 L. Ed. 647; *Grant v. Walter*, 148 U. S. 547, 13 Sup. Ct. 699, 37 L. Ed. 552; *Market Street Railway Co. v. Rowley*, 155 U. S. 621, 15 Sup. 224, 39 L. Ed. 284; *Fox v. Perkins*, 52 Fed. 205, 3 C. C. A. 132; *Galvin v. City of Grand Rapids*, 115 F. 511, 53 C. C. A. 165; *Eames v. Worcester Polytechnic Institute*, 123 Fed. 67, 60 C. C. A. 37.”

In another case the Court said:

“Strengthening and reinforcing agents are improvements in any art but invention in such agents is to be found only in discovering a new principle, or employing new means embodying an old principle. *Turner v. Lenter Piano Company*, 248 Fed. 930, 161 C. C. A. 48; *Crouch v.*

Roemer, 103 U. S. 797, 26 L. Ed. 426; Star Bucket Co. v. Butler Mfg. Co. (D. C.) 198 Fed. 857; Walker Mfg. Co. v. Illinois Brass Mfg Co. (C. C. A.) 265 Fed. 279; Moline Plow Co. v. Omaha Iron Store Co., 235 Fed. 519, 149 C. C. A., 65; Miner v. T. H. Symington Co., 247 Fed. 515, 160 C. C. A. 25; Belsteel Co. v. Lorain Steel Co., 227 Fed. 240, 142 C. C. A. 30, Courts have often said that marked improvement and progressive steps in an art are not, in themselves evidence of invention. As industry progresses, more skill of the mechanic is expected. New Jersey Zinc Co. v. American Zinc Co. etc., Co., (D. C.) 276 Fed. 733, and cases cited."

E. A. McMillin Co. v. Andrescoggin Pulp Co. (supra) pp. 138-9.

The case of Minver v. T. H. Symington Co., 247 Fed., 515, cited in last quotation, is singularly in conformity in its facts with those of the case at bar.

One of the claims made by Counsel for Appellant is that the bed-plates in the Cleveland machine are identical and interchangeable. It is to be remembered in this connection that in the turners now being manufactured by both the Allis-Chalmers Company and the Sumner Iron Works, where a Hill nigger is used the push arm carries two bearings upon the rock shaft. So that the bed-plates in the case of these machines are not interchangeable and the item of expense because of that fact is eliminated.

The Appellant has cited a number of cases in his brief defining invention. Inasmuch as we have also cited a considerable number bearing upon the same question we will not attempt to analyze these

cases, except to call the Court's attention to the fact that the underlying principles running through all these cases is that in order to constitute invention there must be a new and beneficial result not before attained.

In this instance Cleveland does not even claim that he obtained any new result but simply claims that by widening the bearing upon the shaft and straightening out the bed-plate he had made a stronger machine. This, of course, is denied by the witnesses for the defendant with relation to the arm being stronger. The fact that the arm has been abandoned in the latter construction seems to us the strongest possible evidence that its increased strength was not sufficiently great to make it of particular value. Mr. Sumner's testimony as to the cause of the breakage of the bed-plates due to the pounding of the log upon the shaft when it was turned, seems to us the most reasonable explanation of these breakages. The danger of breakage from this pounding is eliminated in the later type of turners by the skid lifts which are not an issue in this case. Cleveland did not claim in claim 12 the combination of a tapering bed-plate. Any method by which the bifurcated arm straddled the bearing formed on the outer end of the bed-plate was open to use, according to his claim, and the fact that he did taper his bed-plate adds nothing to claim 12. In fact it will hardly be contended that straight bed-plates having been in use prior to his application, that he could by simply tapering his bed-plate obtain a patent upon it, or a patent upon any combination of such bed-plate with a single bearing. However, he did not claim this combination in his patent so it is not in issue in this case.

We will submit a brief analysis of the cases cited by the Appellant upon which its counsel seems mostly to rely.

In *Loom vs. Higgins*, 105 U. S. 591, the necessity for a new result is insisted upon in order to confer patentability on a new combination of known devices.

Counsel quotes in full the opinion in the case of *Kurtz vs. Belle Hat Lining Company*, 280 Fed. 277. It will be noted upon page 279 of this case that Kurtz obtained his patent over Rawak (cited against him of record) by a very frank statement in the office, which had objected that no mechanical advantage was pointed out.

So that in this case the patent office had had an opportunity to pass upon this patent after hearing between the original Patentee, Rawak, and the new applicant. However, an examination of this case discloses that Kurtz, by a new method accomplished a new and useful result.

“What Kurtz did was to wholly abolish the inserted material which makes Rawak’s ‘annular pocket’, and to take the cord (which may be used as a stuffing for Rawak’s pocket), and by one line of sewing unite crown, apron, and cord in such manner as to show the cord and form what he calls an ‘ornate seam’. (Page 279).

With reference to the case of *Ottumwa Box Car Co. v. Christy*, 215 Fed. 362, it is sufficient that the issue alleged was anticipation as the language

quoted in Appellant's brief sufficiently indicates. The issue in this instant case is a different one, namely, want of invention.

In *Inhaeuser v. Buerk*, 101 U. S., 647, the Court on page 656 holds that the use of mechanical equivalents performing the same functions cannot be regarded as an invention. It simply holds that one who has substituted another old ingredient for one of the ingredients of the patent combination is an infringer if the substitute *perform the same function* as the ingredient for which it is so substituted, and it appears that it was well known at the date of the patent that it was adaptable for other uses.

In case of *Warren Steam Pump Co. v. Blake & Knowles Steam Pump Works*, 163 Fed., 263, the Court holds (on page 280) :

“Whitting & Wheeler were the first to devise such a structure and that Hall & Gage were the first to devise a valve mechanism specially adapted to that structure, and that it was by these means that the problem of a high-grade air pump was successfully solved.”

The Court on page 277 says :

It is true the patents on their face, especially the Whitting & Wheeler patent, relate largely to structural details and the arrangement of different parts of the structure. It is also true that the patents do not mention any new mode of operation or any new results. In construing these patents, however, these considerations are immaterial provided the pump struc-

ture disclosed in the patents and covered by the claim *does in fact contain a new mode of operation, and does in fact produce new results.*"

The case of Diamond Rubber Company v. Consolidated Tire Co., 220 U. S., 428, is also cited in this brief, and it will be noticed that upon page 531 of this case the Court holds that the inventor produced an entirely new and different result, one probably not anticipated by him, but the fact that he might have produced this combination, not knowing the results, would not bar him from claiming his patent by virtue of the fact that he did actually produce a new and different result.

In the case of Neill v. Kinney, 239 Fed., 309, on pages 312 and 313, the Court says:

"While the disclosures of these prior patents may in one way or another have contributed elemental ideas to Neill's complete conception, they do not when aggregated disclose the Neill structure, nor did they suggest to others the possibility of his subsequent combination. It is not possible to combine any two of their elements and produce his structure, nor is it possible to produce it by combining all, unless they be substantially modified and a new element of 'two sets of perforated ears or flanges located substantially 90 degrees apart and each set providing three perforations arranged in vertical relation to each other' for girt and brace attachment, be added. Though elements of prior art patents are separately found in modified form in the Neill structure, these ele-

ments as combined by Neill resemble nothing before combined in the art."

The case simply holds to the old principle which we contend is that Neill in his combination of old elements, though in this instance he added a new element, produced a distinctly new and useful result.

In the case of Southern Textile Machinery Company vs. Fay Stocking Company, 259 Fed., 243, the claims in issue in that suit had been contested in the patent office and by reason of the action there taken by the successive tribunals, the claim had more than the usual support in the presumption of validity arising in issue. (page 245).

In the case of Sanders vs. Hancock, 128 Fed., 424, Hardy had set one disc in a different position from that of the position in the Niles patent. The court holds that there was no patentable novelty in the peculiar position of his disc.

So that in this instance the different positions of the hook arm in the Cleveland machine, it being placed in direct line with the center of the cylinder as differentiated from the old Simonson machine, would add nothing to the patentability of Cleveland's claim.

In the case of Turrill vs. Railway Company, 68 U. S., 510, on page 512 the Court says that the question should have been submitted to the jury whether the machine introduced by the defendants or any of them, or any of the prior movable press-blocks, (which were introduced to show the state of prior art). were substantially the same as the machine of the patentee.

There is no question at all in this case but that Cleveland's machine is substantially the same machine as the old Simonson machine.

In the case of Providence Rubber Company vs. Goodyear, 76 U. S. 788, the Court was apparently considering a pioneer patent's re-issue which was examined and passed upon by the Commissioner. (page 798).

Carnegie Steel Company vs. Carmbria Iron Company, 185 U. S., 403. This was a process patent and the Court in the syllabus says:

"A process patent is not anticipated by mechanism which might, with slight alterations have been adapted to carry out that process, unless such use of it would have occurred to one whose duty it was to make practical use of the mechanism described."

The language of the Court which the Appellant quotes in its brief is, of course, applicable to any invention.

The Appellant in its brief, on page 98, asserts that the Court below lost sight of the benefits of the greater strength and economy and the fact that a single casting could be used effectively for both arm units in the Cleveland machine. As we have heretofore contended, even if Mr. Cleveland's machine had greater strength and was more economical to construct, these facts alone would not confer patentability upon his design and this is the first time we have heard that a single casting could be used alone in the Cleveland machine. A single casting

of the old straight arm bed-plate would be applicable to both arm units and the push arm and the hook arm of the both machines, of course, would have to be cast separately.

Aside from this in the new construction adopted by the Sumner Iron Works and by the plaintiff's licensee, Allis-Chalmers Company, where the Hill nigger is used, a single casting cannot be used for both units for the bed-plates.

The case of *Los Alamitos vs. Carroll*, 173 Fed., 280, postulates a new result, the very thing lacking in the Cleveland patent.

In *Naylor vs. Alsop Process Co.*, 168 Fed., 911, the point in issue there was held by the Court to disclose both novelty and invention, and we submit a reading of the case will very clearly ustify the conclusion of the Court.

In the case of *Pelton Water Wheel Company vs. Doble*, 190 Fed. 760, it is to be noted that the claims of the Doble invention were unsuccessfully contested in the patent office. On page 766 the Court says:

"There is no doubt from the reading of the entire case that Dobbles' nozzle produced a substantially better result than had been accomplished by other combinations and marked a decided improvement upon any prior combination."

There is nothing in this case to show that Cleveland accomplished any better result from the operation of his machine than was done by the old Simon-

son turner. Indeed he only claims that he reduced the liability of breakage of the arms and the bed-plates, and we submit that the evidence in this case does not establish that Cleveland secured even these results by his combination.

From a comparison of the Cleveland patent with the state of the prior art we feel satisfied that the Court must reach the conclusion that he made only such a mechanical improvement as would occur to any mechanic familiar with log turners; that his improvement did not imply such creation as would fall within the term of patentable novelty; that it was a mere change of form or arrangement of the parts wherein there was no resulting change or improvement in the manner of the operation of the device.

We believe that the cases heretofore cited have established the rule of law that the making of two parts into one is a mere mechanical change and that adopting as a part for a certain article, a device familiar in another art, is not patentable even though the other art is not analogous. We believe further that the cases heretofore cited will establish that while courts will give pioneer patents the benefit of liberal construction, an improvement patentee will be strictly held to show in his claim the attainment of a substantially new form of operation with substantially improved results, and that if his machine is substantially equivalent in its operation and results with machines of a prior art, it cannot expect to find monopoly in the patent laws. As the Court below said of the Cleveland machine, "there

was no substantial change in function, operation or result.”

We respectfully submit that the decision of the lower court was right and should be affirmed.

COOLEY, HORAN & MULVIHILL, and
McCORMAC SNOW,

Attorneys for Appellees.

No. 4231

IN THE

United States Circuit Court of Appeals

FOR THE

NINTH CIRCUIT

**D. J. MURRAY MANUFACTURING
COMPANY, a corporation,**

Appellant,

vs.

**SUMNER IRON WORKS, a corporation
and SILVERTON LUMBER COM-
PANY, a corporation,**

Appellees.

APPELLANT'S PETITION FOR RE-HEARING

T. J. GEISLER,

Attorney and Counsel for Appellant.

No. 4231

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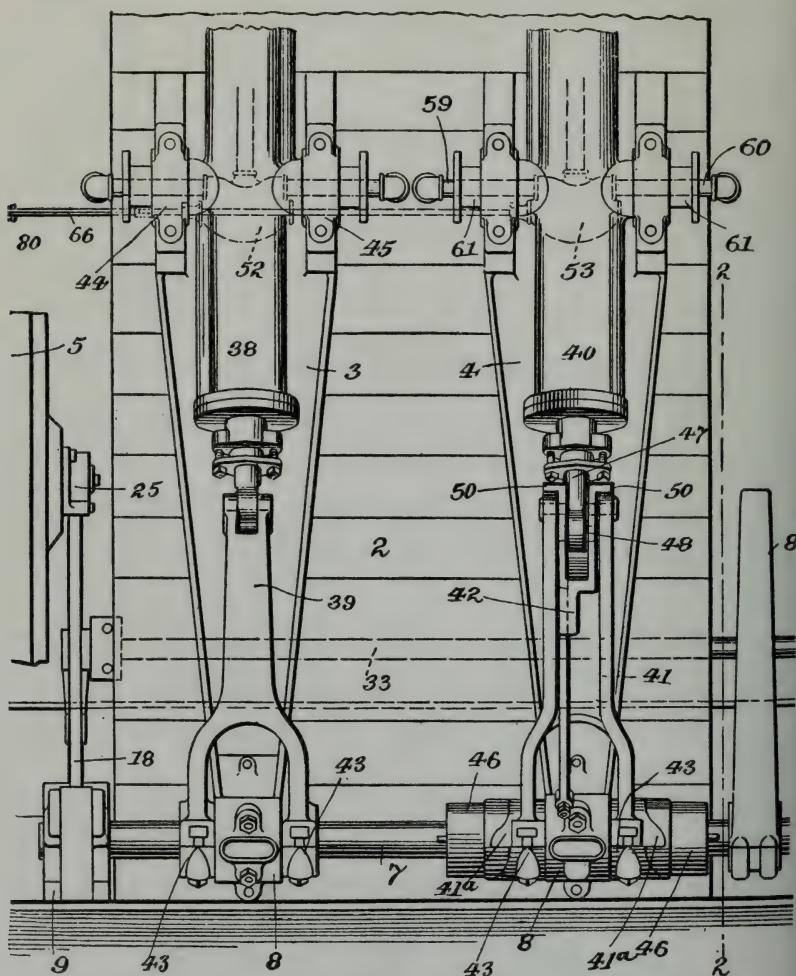
The appellant prays for a rehearing of this appeal for the reason that the question of law on which the case was decided against appellant was not argued or presented on this appeal and appellant now prays to be heard.

This case, as will be recalled, involves Claim 12 of the patent granted to C. E. Cleveland for improvement in Log Handling Mechanism, No. 933,231, September 7, 1909, and assigned to appellant.

The lower Court in a very brief opinion held the claim invalid for lack of invention.

This Court, however, found that Cleveland made “undoubtedly an improvement” in the art, but construed Claim 12 as not properly claiming the invention.

A copy of the patent will be found in the supplement of Exhibits to Transcript of Record. It is also detailed on pages 7 and 8 of Appellant’s Brief. For convenient reference Fig. 3 of the patent drawings illustrating the combination set forth by Claim 12, and that part of the specification particularly describing the same is here reproduced.



In the specification of the patent, page 1, line 44, the main object of the invention is stated to be "*to produce a simple and efficient (log) loading mechanism.*"

On page 2 of the specification, reading from line 112, the patentee said:

"Each of the cylinder supporting bed-plates 3 and 4 is alike in form, being a broad, *straight casting* provided at its outer end with a bearing 43 which embraces the shaft 7, and with bearings 44 and 45 for the trunnions of the cylinder. As will be seen upon reference to Fig. 3, the lower or outer end of each of the arms 39 and 41 is forked or bifurcated, the members or bearings 43 making a close fit against the boxes or bearings 8. Thus *said arms get a relatively wide bearing* upon the shaft and *the parts all serve to mutually support and sustain each other, the straight and relatively broad bed-plate standing the strains* to which it may be subjected much better than the usual crooked plates now in use."

This Court, in passing on the question of invention, in its opinion said (page 2, line 4):

"Log turners were old in the art, several patents having been issued to cover combinations more or less similar to that which was described in the Cleveland patent. *The Cleveland log turner was undoubtedly an improvement on those which preceded it. The appellee, attracted by its features, took advice of counsel as to the validity of Claim 12,*

and acting thereon, *deliberately imitated the Cleveland machine*. One of the improvements in that combination is *the bed-plate* which Cleveland used. All prior log turners that had bed-plates used a plate with the shaft bearing offset to one side of the center of the cylinder. *Cleveland's bed-plate was placed in direct line with the center of the cylinder and push arm, and the evidence indicates that such construction was advantageous in equalizing the strain and obviating breakage of the bed-plate*. But *the peculiar form of Cleveland's bed-plate is not made an element of Claim 12.*"

And supplemented the last sentence by saying (Opinion, Page 3, line 3):

"The Cleveland log turner accomplishes no new result. So far as the mere handling and turning of logs is concerned it is no better and no more efficient than the log turners which preceded it. *Its only advantage is in the cheapness of its construction and the increased strength of its component parts and the consequent avoidance of breakage*. This is not effected by any new element in the combination."

The question as to what device the claim describes is one wholly of law.

2 Robinson on Patents, Sec. 732.

The question as to what is the true interpretation of the Cleveland claim was not argued in the Court below.

Therefore appellant did not consider that point involved in the case. The only question which appellant believed presented by the appeal was, whether the Cleveland improvement constitutes invention.

Appellee's brief in this Court merely asserted in substance, at page 75, that while Courts will give pioneer patents the benefit of liberal construction, an improvement patent must be *strictly* construed. But no authorities sustaining such doctrine were cited, and it is submitted such doctrine is fundamentally wrong.

The question was not argued on the hearing of this appeal as will be remembered.

It is submitted that the affirmance of the decree of the lower Court is unjust to appellant for the following reasons:

1. An improvement patent is entitled to the same liberal construction as a pioneer patent.
2. A liberal construction of said claim requires that the term "bed-plate" be interpreted *to designate only the particular form of bed-plate specifically described and illustrated in patentee's specification and drawings.*

This point is developed on page 9 et seq.

3. General words in a claim are sometimes to be limited by particular words in the specification. *The specification describes, and the drawing shows only a bed-plate consisting of a "STRAIGHT CASTING".*

This point is developed on page 16 et seq.

4. The Court is not asked to omit nor to interpolate anything, but *is merely so to interpret the language of said claim as to make it conform* to the descriptive part of the specification, and the drawings.

The patentee having described and illustrated but one form of construction of his bed-plate, *the presumption is that* that form at least is preferred, and was specifically intended to be referred to by the general language of the claim, and thus renders the claim valid rather than that the language was intended to designate *any form* of bed plate, or any other arrangement, and thus render the claim invalid; particularly so where the latter construction manifestly would *imagine a device incapable* of carrying out the purpose of the invention.

An improvement patent is entitled to the same liberal construction as a pioneer patent.

Appellee in asserting that there is a difference between the construction of a pioneer patent and an improvement patent evidently misinterpreted the language sometimes applied to the interpretation of a claim when the question of infringement is at issue. The question of infringement frequently involves a question of equivalency. With the latter question we are not here concerned; infringement by an exact copy being conceded by appellee.

In *Eibel Process Co. vs. Minn. Ont. Paper Co.*, 261 U. S. 46, 62, 67 L. Ed. 523, 532, Chief Justice Taft said:

“* * * Eibel made a very useful discovery which has substantially advanced the art. His was not a pioneer patent, creating a new art; but a *patent which is only an improvement on an old machine may be very meritorious and entitled to liberal treatment.* Indeed, when one notes the crude working of machines of famous pioneer inventions and discoveries, and compares them with the modern machines and processes exemplifying the principle of pioneer discovery, *one hesitates in the division of credit between the original inventor and the improvers; and certainly finds no reason to withhold from the really meritorious improver, the application of the rule ‘ut res magis valet quam pereat,’* which has been sustained in so many cases in this Court.” ¹(Citing several authorities.)

The maxim “*ut res magis valet quam pereat*” was applied in the construction of patents at a very early date.

In *Ryan vs. Goodwin*, 21 Fed. Cas. 110, 112 (12186) (1839), Story, Circuit Justice state it to be a clear rule of our law—

“to carry in effect the obvious object of the constitution and laws in granting patents, ‘to promote the progress of science and useful arts,’ to give a liberal construction to the language of all patents and specifications (quoting the maxim) so as *to protect and not to destroy the rights of real inventors.* If, therefore, there be any ambiguity or my uncertainty in, any part of the specification;

yet if taking the whole together, the court can perceive the exact nature and extent of the claim made by the inventor, it is bound to adopt that interpretation, and to give it full effect."

In *Eibel Process Company vs. Minn. & Ont. Paper Co.*, supra, Chief Justice Taft said:

(7) "The next objection to the patent which prevailed in the Circuit Court of Appeals is that its terms are too vague because the extent of the factor of pitch is not defined except by the terms 'substantial' and 'high.' *The figure accompanying the specification and illustrating the improvement indicates an angle of four per cent. * * **" [Note here that *the patent drawing* is also to be taken expressly into consideration in defining the patent claim.] "Indefiniteness is objectionable because the patent does not disclose to the public how the discovery, if there is one, can be made useful and how its infringement may be avoided. We do not think any such consequences are involved here. This patent and its *specifications were manifested to readers who were skilled in the art of paper making and versed in the use of the Fourdrinier machine. The evidence discloses that one, so skilled had no difficulty, when his attention was called to their importance, in fixing the place of the disturbance and ripples to be removed, or in determining what was the substantial pitch needed to equalize the speeds of the stock and wire at that place. The immediate and successful use of the*

pitch for this purpose by the owners of the then fastest machines and by the whole trade is *convincing proof* that one versed in paper making could find in Eibel's specifications all he needed to know, to avail himself of the invention."

A liberal construction of said claim requires that the term "bed-plate" be interpreted to designate only the particular form of bed plate specifically described and illustrated in patentee's specification and drawings.

2 Robinson on Patents, Sec. 523, states:

The attitude of the courts towards the inventor, in its interpretation, is just and *liberal*. "Thus, though the Claim is distinct from the description, and as such must be complete in itself and not merely refer to the description for a statement of the invention claimed, yet *every feature of the invention which the description has declared to be essential*, and all the modes of using it therein prescribed, *are covered by the claim, whether or not they are particularly mentioned*. Without departing from the rule that the claim must clearly limit and define the exact invention for which a patent is desired, or assuming the power to alter or enlarge a claim, *the courts sustain it whenever in connection with its proper exponent, the description, and in view of the state of the art, it renders the nature of the claimed invention evident to those to whom the specification is addressed.*"

In Section 738 of the same work, it is stated:

"The object of interpretation is to make the indefinite exact and the doubtful plain." And where the language of the patent fails to define with precision, or to describe with clearness the interpretative power "must then be *employed for the removal not the creation of ambiguities, and for the erection not the destruction of limitations to the inventor's claim.*"

In Section 743 (Ib) it is stated:

"In construing the claims of a patent by its descriptive portion, the *scope of the claim may often be restricted*, but can never be enlarged * * *."
*"When the claims exceed * * * an interpretation of the descriptive matter, they must be restricted by it."*

In Walker on Patents, 4th Ed., Sec. 185, p. 131, it is stated:

"A patent should be construed in a liberal spirit to sustain the just claims of the inventor. This principle is not to be carried so far as to exclude what is in it, or to interpolate anything which it does not contain. But liberality, rather than strictness, should prevail where the fate of the patent is involved, and the question to be decided is whether the inventor shall hold or lose the fruits of his labors." (Citing *Rubber Co. vs. Goodyear*, 9 Wal. 788; 19 L. Ed. 566, 568.) * * * *"That liberality as often shows itself in a narrow construction as in a broad one; for a narrow construction may be as*

necessary to establish the novelty of a patent, as a broad construction is to lay the foundation for proof of its infringement. Therefore *when it becomes necessary to construe the claims narrowly in order that its novelty may not be negative by the prior art, courts will give such a narrow construction, if they can do so consistently with the language of the claim and of the description.*" (Citing *Klein vs. Russell*, 19 Wall. 433, 22 L. Ed. 117; *Jones vs. Barker*, 11 Fed. 600.)

In *Brooks vs. Fiske* (1853) 15 How, 212, 223, 14 L. Ed. 665, it is stated:

"The patentee ought to state distinctly what it is for which he claims a patent and describe the limits of the monopoly; * * * it is for the purpose of warning an innocent purchaser, or, other person, using the machine of his infringement, and at the same time of taking from the inventor the means of practicing upon the credulity or fears of other persons, by pretending that his invention was different from its ostensible objects."

The court then criticized the language of the claim, but added:

"*The claim, or summing up, however, is not to be taken alone, but in connection with the specification and drawings; the whole instrument is to be construed together.* But we are to look at the others only for the purpose of enabling us correctly to interpret the claim."

In *Winans vs. Denmead* (1853), 15 How. 330, 14 L. Ed. 717, 722, Justice Curtis said:

“Specifications are to be construed liberally, in accordance with the design of the constitution and the patent statutes of the United States, to promote the progress of the useful art and allow inventors to retain to their own use not anything which is matter of common right, but what they themselves have created.”

In *Corning vs. Burden* (1853), 15 How. 251, 14 L. Ed. 683, 691, the Court said:

“It is true that the patentee, after describing his machine, has set forth his claim in rather ambiguous and equivocal terms which might be construed to mean either a process or machine. In such case the construction *should be that which is most favorable to the patent ‘ut res magis valeat pareat.’* His patent bearing a title which claims a machine, and his specification, describing a machine, to construe his claim as far as the function effect or result of his machine would certainly endanger, if not destroy, its validity.”

Brooks vs. Fisk, was cited with approval in *Bates vs. Coe*, (1878), 98 U. S. 31; 25 L. Ed. 68, 71, Justice Clifford saying:

“Apply that rule to the case, and it follows that there is a substantial variance between the claims of the patent and the description of the invention or inventions described in the specification.

“In construing patents, it is the province of the court to determine what the subject matter is upon the whole face of the specification and the accompanying drawings.” The court, accordingly, construed the invention as “an improved drilling machine, *composed of the devices pointed out in the specification* which operate and perform the functions therein described. * * * *Construed in that way, as the specification should be, it is clear that the whole invention * * * is sufficiently described both in the specification and in the claims of the patent, and that the objections of the respondents in that regard must be overruled.*”

“Cases arise not infrequently, where the actual invention described in the specification is larger than the claims of the patent; and in such cases it is undoubtedly true that the patentee in a suit for infringement must be limited to what is specified in the claims annexed to the specification; but it is equally true that the claims of the patent, like other provisions in writing, *must be reasonably construed*, in case of doubt or ambiguity it is *proper in all cases to refer back to the descriptive portions to aid in solving the doubt or in ascertaining the true intent and meaning of the language employed in the claims*; nor is it incorrect to say that due reference may be had to the specification, drawings and claims of a patent in order to ascertain the true legal construction.”

In *Werner vs. King* (1877), 96 U. S. 218; 24 L. Ed. 613, the patent claim read:

“What I claim as new and desire to secure by letters patent is: “The guide E constructed with one or more curved or arched portions *a* in combination with suitable rollers substantially as described.”

Justice Miller said:

Where form is the essence of the invention, it is necessarily material; and if the same object can be attained by a machine different in form, where that form is inseparable from the successful operation of the instrument, there is no infringement.” Citing *Winans vs. Denmead*, 15 How. 330, 14 L. Ed. 717.

In the Cleveland invention the particular form of his bed-plate, as described in the descriptive part of his specification and illustrated by the patent drawings was the only form which would lend itself to the successful attainment of the results he had in mind; and his specification drawings and claim construed together, fairly and unmistakably, advises the public that it is free to use any other form of bed-plate. Therefore, Cleveland claimed only his own invention; he made no pretence to claim anything else; the appellee does not so assert; it made what may be termed a Chinese copy of claim 12, while it was free to adopt any construction disclosed by the prior art, with which appellee was as familiar as the inventor.

The requirements of the patent statutes were intended to apprise the public of the nature of the invention; they were not intended to facilitate dodging the patent.

The question is, did Cleveland fairly state his invention, so as to make it fully accessible to the public; did he comply with the statute which prescribes that "he shall particularly point out and distinctly claim the * * * combinations which he claims as his invention or discovery."

To assume a possible different form of bed-plate, or an arrangement of the parts otherwise than as directed in the body of the specification would disregard its instructions and frustrate the objects of the patent. For appellee to contend that under the language of the claim such other construction might be deemed included is to ignore not only the maxim above quoted, also the rules which commonly control the interpretation of contracts, but besides would produce an inoperative structure with respect to the purpose and result to be attained by Cleveland's improvement.

The fact that "Cleveland's bed-plate was placed in direct line with the center of the cylinder and the push arm" is apparent from said Fig. 3 of the drawings. And such feature is plain to any mechanic at all versed in the art by the above given excerpt from the specification. It is a feature inherent in the improvement, without which the result to be attained would be impossible.

There was not even a suggestion on the part of appellee in either court, or in its brief, that the nature of Cleveland's invention was at all in doubt. Appellee understood it perfectly, and *deliberately copied* it, in order to make use of its benefits.

General words in a claim are sometimes to be limited by particular words in the specification.

In Jones vs. General Fire Proofing Company, 254 Fed. 97-100 (C. C. A., 6th, 1918), the Court remarked:

“Our conclusion is that this is a proper case for the application for the principle to which we have referred in Davis vs. New Departure Co., 217 Fed. 775. From the broad point of view involved in Claim 3 the new thing provided by Curtis was the diagonal edge over which the sheet should be drawn into another plane as it progressed longitudinally. This, we consider a new element in this association, and it imparts both validity and character to the claim. * * * We do not overlook the fact that *this diagonal edge is not, in so many words, specified in claim 3; but we conclude that it is imperatively implied.* The claim calls for ‘a support over which the slitted sheet is moved,’ and since such a sheet could not be moved lengthwise of the support and drawn away from the plane of the support into expansion as it passes off the same, unless it passes off in a diagonal line, we must conclude that the ‘support’ of the claim is the support thus described.”

In *Hauser Awning Co. vs. Anton et al.*, C. C. A., 6th (1916), 233 Fed. 262, 264, the claim included among other elements, "An awning arm comprising two sections, pivoted together at their adjacent ends." The Court said:

"While it is well settled as a general rule that elements not named in a claim will not be read into it in order to save the claim from anticipation, it is equally *well recognized that when some general arrangement or environment was evidently intended by the patentee, is fully described in the specification, and is such that without it the whole device is inoperative, this feature will be deemed to have been contemplated by the patent grant, and to that extent, may be read into the claim.* 'This may be done with a view of showing the connection in which the device is used and proving it is an operative device.' *McCarty vs. R. R. Company*, 160 U. S. 110, 116; 40 L. Ed. 358, 361. *Here the thought that the awning arm should unfold by gravity only is not, in so many words, expressed in either claim, and is implied in the first claim less clearly than in the second; but it is expressed in the specification as one of the purposes the whole description, is appropriate to that idea and not to any other form, and we think it plain enough that the patent was intended to reach only that form. Under these conditions claims 1 and 2 should be interpreted as restricted to awning arms which operate by gravity. So restricted no anticipation appears * * *.*"

In *Knox vs. Murtha* (1871), 14 Fed. Cas. 823, 824 (No. 7911), the Court said:

“This is a claim for a combination only, and one of the questions raised is whether the combination secured by it is limited to the use of a *tight smutter* or scourer, or whether it covers the use of *any form* of smutter or scourer in combination with the other elements described. If, as the defendant, insists, it be construed so as to confine the patent to a combination in which one element is a tight smutter or scourer, this action must fail, for the combination employed in the machine used by the defendants contains an open scourer, and does not contain a tight smutter or scourer. * * *

In the claim itself, which designates the combination sought to be secured *no description is given of the scourer* which is stated to be an element of the combination sought to be secured. The words are ‘in combination with a smutter or scourer,’ and these words it is said, are sufficient to include any form of scourer then known. But, effect must be given to the words, “substantially as described,’ which are used in the claim and their effect is to refer to the specification for the description of the elements of the combination which is wanting in the claim. The *general words of the claim* in respect to the scourer *are, therefore, to be construed as limited by any particular description found in the specification.* * * *

Only a *tight* scourer will answer to construction of the machine or combination described in the Shaw patent, and *by the use*

*of that form of scourer alone can the result be obtained which the patent declares to be the result sought by the invention * * *."*

In *Stillwell Co. vs. Eufaula Co.*, 117 Fed. 410, C. C. A. 6th ¹(1902), it was held that when *the language of a claim for a combination includes an element duly described in general terms, the Court may look to the specification to ascertain its meaning, and the claim may be limited by the specification.* (p. 414)

In the last cited case, the claim ended with the words: "substantially as described." But it is indisputable that such words are *always understood* in each claim, and impart to it no special qualification, or any particular significance.

National Tube Co. vs. Mark, 216 Fed. 507, 518.
C. C. A. 6th (1814.)

Stillwell Co. vs. Eufaula Co., *supra*, cited many authorities, among them: *Hailes vs. Van Wormer* (1873), 20 Wall. 353, 22 L. Ed. 241, in which Justice Story said:

"The first claim * * * is unquestionably too broad to be sustained unless limited to the means described in the specification. So it was doubtless intended to be limited by the patentee, for the claim speaks of the combination claimed as substantially as described, that is, described in the 17 L. Ed. 668, 672 (1863), the patent to be construed specifications."

In *Turrill vs. R. R. Company*, 1 Wall. 491, 510; 17 L. Ed. 668, 672, involved a device for welding up and reforming the ends of railroad rails. The combination stated in the patent included a movable press-block. It was contended and the lower Court so held, that since movable press-blocks in similar combinations were old, the patent was void, *the claim not specifying any particular form of movable press-block*. Justice Clifford, speaking for the Court, quoted Justice Story opinion in *Ryan vs. Goodwin*, *supra*, and said:

“Patents for inventions are not to be treated as mere monopolies, and therefore odious in the eyes of the law; but they are to receive a liberal construction, and under the fair application of the rule, *ut res magis valeat quam pereat*, are, if practicable, to be so interpreted as *to uphold and not to destroy the right of the inventor*.”

* * *

IV. “*Evidently the claim must be construed in connection with the explanation contained in the specification, and when viewed in that light it is quite clear that he should receive a more restricted construction than was given to it in the judgment of the Court. Special devices are described as combined and arranged in a particular manner and operate only in a special and peculiar way for a special purpose, and to effect a special result. Obviously it is not a claim for any kind of movable press-block, combined and operating in any way with any kind of fixed block to accomplish any*

purpose, or effect *any* kind of result. Giving that construction to the claim then, indeed, it would be true that the plaintiffs, when they admitted that movable press-blocks in combination with various shapes and used for various purposes were older than the invention of the patentee, did admit away their whole case, and, if viewed in that light, it would be equally true that there was no question of fact to be submitted to the jury. *But such is not the true construction of the patent, as is obvious from every one of the explanations of the specification.* Invention was of such a movable press-block as is described, having its edge formed to the side of the rail in combination with such other block as described, with its edge of similar but *reversed form arranged* as described and combined and operating *in the particular way described for the special purpose of effecting the desired result.*”

The foregoing case was cited by the Supreme Court in deciding the case of Eibel Process Com. vs. Minn. & Ont. Paper Co., *supra*.

In Bragg vs. Fitch ¹(1887), 121 U. S. 478, 30 L. Ed. 1009-1010, the Court said:

“It is obvious from the foregoing review of prior patents * * * that in construing the claims of his patent they *must be restricted to the precise form and arrangements of parts described in his specification, and the purpose indicated therein.*”

In Norton vs. Jensen, 49 Fed. 859, 864, this Court, speaking by Judge Hawley, said:

“It is always the duty of the courts to construe the patents by a reference to the language of the claims and *an examination of the specifications and drawings* accompanying the same.”

In Curry vs. Union Elec. Welding Co., 230 Fed. 422, 426 (1916, C. C. A. 6th), it was held that:

“The *name of a part*, as an element of a claim, of necessity *carries us back to the specification* to see what that part is” just the same as if the name of that part in the claim had appended to it *a specific reference letter*, or the claim ended with the phrase ‘*substantially as described.*’”

In Hudson Mfg. Co. vs. Lowden Mach. Co. (1921), 276 Fed. 527, C. C. A. 8th, was involved patent No. 990,827, granted to William Lowden, April 25, 1911, for an improvement in Cattle Stanchions. The claim read:

“In cattle stanchions, two co-acting members having their center portions spaced apart and approximately parallel, and their upper and lower portions inclined towards each other, at a uniform angle, etc.”

The prior art showed stanchions with ends square and circular. (See sketch included in opinion.) The patent drawings show V-shaped ends. The contention of defendant was that the prior stanchion also had its ends formed at a uniform angle.

But the Court said (p. 532) :

“*Turning to the specification we find this: These members * * * have their upper and lower ends bent towards each other at an angle of approximately 45 degrees. * * ** *The drawings which accompany the patent* referred to in that part of the specification just read, show the ends of the side members bent towards each other at an angle of approximately 45 degrees, and that they stand at approximately right angles to each other.

“*When the claims are thus interpreted and construed the conclusion which we have reached therefrom seems to necessarily follow, so that the patented improvement, as defined by the claims, when read in the light of the specification and drawings, consists in a stanchion having V-shaped ends bent towards each other at an angle of approximately 45 degrees and standing towards each other at approximately right angles.*

(p. 531) “⁹(2) *But appellant argues that the language of Claims 1, 2 and 3 is so simple, and their meaning clear, that the thing described is obvious, and that therefore there is no room for interpretation; hence the specification and drawings relied upon in reaching the foregoing conclusions cannot be resorted to. But none of the claims deals with the angle of the bends directly, though indirectly they require that the bends shall be at uniform angles, that is, ‘their upper and lower portions inclined towards each other at a uniform*

angle.' This requirement could be met by deflecting the ends so that they would circumscribe an obtuse angle, resulting in an *unusable and absurd structure*, or to circumscribe an angle so acute that it would be *wholly unfit for the intended purpose*.

* * * *The specification and claims of a patent constitute a contract between the United States and the patentee*, and they are to be read and construed together in the same way, and by the same rules by which other contracts are interpreted.

* * *''

In the case at bar, the Court is not asked to omit nor to interpolate anything, but is merely so to interpret the language of said claim as to make it conform to the descriptive part of the specification, and the drawings.

All the elements essential to the inventive thought, and the result to be attained are set forth in Claim 12, namely: (Doble v. Pelton, 186 Fed. 526)

"In a log-handling mechanism, the combination of a bed-plate provided at its outer end with a shaft-bearing; a shaft extending through said bearing; an arm in operative relation with the shaft, said arm being bifurcated and straddling the bearing formed upon the outer end of the bed-plate; a power cylinder pivotally mounted upon the bed-plate; and a piston rod working in the cylinder and connected at its outer end to the adjacent end of the arm."

The only criticism of this claim is "the *particular form of Cleveland's bed-plate* is not made an element" of it.

Now since a *bed-plate* is specified in the claim and its exact, and only usable form, is specifically described in the body of the specification, and is specifically illustrated in said Fig. 3 of the patent drawings, *would not the fair inference be that said particular form alone was intended to be covered by the claim?*

Infringement will not be found against one who comes within the *letter* of a claim, but not within the *spirit* of the invention..

Westinghouse vs. Boyden Co., 170 U. S. 537, 568; 42 L. Ed. 1136, 1147.

The same equitable principle should govern the interpretation of a patent for all purposes.

Thus a patent covering a beneficial improvement, fully described in the body of the specification should not be taken from the inventor and destroyed because its claim does not comply with the letter of the law, although it fully complied with its spirit and intent.

The Cleveland claim must be interpreted by referring to, and by the aid of, the descriptive part of the specification and the drawings therein referred to.

The combination described by Claim 12 is to be differentiated from the prior act, by referring to the body of the specification and the drawings in order to ascertain the true invention.

The element termed "a bed plate," in the light of the prior art, must be interpreted as designating the particular form of bed plate shown and described in the descriptive part of the specification and the drawings.

The element "*a bed-plate*" does not designate *any* form of bed-plate, nor *any* arrangement of it with the other elements, but *must be interpreted as designating the particular form of bed-plate shown and described in the descriptive part of the specification and the drawings*; especially so because *the patentee described only one form*, and has expressly stated that that form of bed-plate, and the particular arrangement of the parts combined therewith, *alone are capable of producing the result sought to be attained by the invention*.

When the instruction of the Cleveland specifications and his drawings are followed, *the placing of his bed-plate in direct line with the center of the cylinder and push arm is inevitable*.

To interpret the element "a bed-plate" as designating *any* form of bed-plate would do violence to plaintiff's plain description and illustration of his invention. To contend that his specification as a whole does not clearly and fully and distinctly define the patented invention, and *specifically the particular bed-plate* which he alone found capable of producing the result to be attained by his invention, would do violence to all rules governing the interpretation of ordinary contracts. *To contend that Claim 12 covers, or might even be construed to cover, any other form of bed-plate, or any arrangement of elements other than those alone and*

particulars described in the body of the specification and illustrated by the drawings would be to distort the plain purpose of the Cleveland invention instead of aiding its interpretation.

Appellee confesses on the record that it did not so misinterpret the invention, but to the contrary knew exactly what the invention claimed is, and "*deliberately imitated the Cleveland Machine.*"

Many further authorities might be cited but would serve no useful purpose. The rule of law which the Court is asked to apply is both plain and fair.

Cleveland fully and fairly complied with his part of the contract. He advanced the art, and so described his invention as to make it fully accessible to the public, and so as to make its exact nature readily understood. His claim states the combination by which his improvement may be carried into effect. No combination composed of parts as named and combined in Cleveland's Claim 12 is found in the prior art. *All* the parts of Cleveland combination, and their co-operative relation are intelligibly set forth in the claim when properly construed; and granting that if we might now redraft the claim, in the light of past events, we might improve it, after all the improvement of its language would merely deal with a matter of form and not of substance.

The parts composing the combination being specifically set forth by name, their peculiarities will be found by referring back to the specification and the drawings

constituting a part of the latter, and that is all the law requires of a patentee.

THEREFORE, appellant prays that a re-hearing may be granted in order that this Court may be fully advised and justice may be done.

Respectfully submitted,

T. J. GEISLER,
Counsel for Applicant.

I hereby certify that in my judgment the foregoing petition for rehearing is well founded, and that it is not interposed for delay.

T. J. GESLER,
Counsel for Appellant.

**United States
Circuit Court of Appeals
For the Ninth Circuit**

RAJOTTE-WINTERS, Inc.,
A Corporation,
Plaintiff in Error,

vs.

THE WHITNEY COMPANY,
A Corporation,
Defendant in Error.

Vol. I

**Transcript of Record
Upon Writ of Error to the United States District
Court of the District of Oregon**

ALFRED P. DOBSON, Gasco Building, Portland, Oregon, and
WAKEFIELD & WITHERSPOON, Spokane, Washington.
For the Plaintiffs in Error.

DOLPH, MALLORY, SIMON & GEARIN, and
EDGAR FREED, Mohawk Building, Portland, Oregon.
For Defendants in Error.

FILED

AUG 19 1924

F. D. MONKTON

CLERK

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**United States
Circuit Court of Appeals
For the Ninth Circuit**

RAJOTTE-WINTERS, Inc.,
A Corporation,
Plaintiff in Error,

vs.

THE WHITNEY COMPANY,
A Corporation,
Defendant in Error.

Transcript of Record

**Upon Writ of Error to the United States District
Court of the District of Oregon**

CITATION ON WRIT OF ERROR

United States of America, }
District of Oregon. } ss.

To The Whitney Company, a Corporation, Greeting:

You are hereby cited and admonished to be and appear before the United States Circuit Court of Appeals for the Ninth Circuit, at San Francisco, California, within thirty days from the date hereof, pursuant to a writ of error filed in the Clerk's office of

the District Court of the United States for the District of Oregon, wherein Rajotte-Winters, Inc., a Corporation, plaintiff in error and you are defendant in error, to show cause, if any there be, why the judgment in the said writ of error mentioned should not be corrected and speedy justice should not be done to the parties in that behalf.

Given under my hand, at Portland, in said District, this 11th day of January, in the year of our Lord, one thousand, nine hundred and twenty-four.

R. S. BEAN, Judge.

STATE OF OREGON,)
County of Multnomah,) ss

Due service of the within Citation on Writ of Error is hereby accepted in Multnomah County, Oregon, this 11th day of January, 1922, by receiving a copy thereof duly certified to as such by Alfred P. Dobson, attorney for plaintiff.

(Sgd) EDGAR FREED,
Of Attorneys for Defendant.

Filed Jan. 11th, 1924.

IN THE DISTRICT COURT OF THE UNITED
STATES FOR THE DISTRICT OF
OREGON

July Term, 19—

BE IT REMEMBERED, That on the 17th day of October, 1923, there was duly filed in the DIS-

TRICT COURT OF THE UNITED STATES FOR THE DISTRICT OF OREGON, an Amended Complaint in words and figures as follows, to-wit:

AMENDED COMPLAINT

Comes now the plaintiff and by leave of court first had and obtained files herein its Amended Complaint and for cause of action against defendant alleges:

I.

That at and during all of the times hereinafter mentioned, plaintiff was and now is a corporation organized and existing under the laws of the State of Washington, having its principal office and place of business in the City of Spokane, said State.

II.

That at and during all of the times hereinafter mentioned, defendant was and now is a corporation organized and existing under the laws of the State of Michigan, and having its principal place of business and office in the City of Detroit in said state.

III.

That on or about the 25th day of June, 1919, plaintiff and defendant made and entered into an agreement in writing wherein and whereby for the remuneration therein stated, plaintiff undertook and agreed to furnish all labor and perform all work necessary or as may be required of it to construct 12½ miles of railroad road bed in accordance with a certain map

and profile (which had prior thereto been submitted to plaintiff by defendant) from Tillamook Bay to Kilches River, thence up the Kilches River to Section three (3) Township one (1) North Range Nine (9) West W. M. in Tillamook County, Oregon.

IV.

That said above mentioned map and profile of said proposed road-bed which had been prepared by defendant's engineers, prior to the making and signing of said agreement, purported to show, within reasonable limits, the approximate amounts of the various materials to be moved and placed, and also the general character and amount of the work to be done in and about the construction of said road-bed; that prior to entering into said agreement plaintiff made an examination of the ground over which said railroad was to be constructed, as shown by said map and profile and from said examination made an approximate estimate of the amount of work to be done, also of the quantities of the various materials to be moved and placed, and also the cost of said work; that in making said estimates plaintiff assumed and had the right to assume, that in the actual construction of said road-bed there would be no considerable deviation from said map and profile, and that defendant had employed competent engineers and had caused said engineers to make and prepare a careful survey and examination of the ground over which said railroad was to be constructed, and that said map and profile so furnished to plaintiff had been prepared in accordance with

said information so obtained, and that it was feasible and practical to construct said railroad in accordance therewith, and that in the actual construction of said railroad said original map and profile would be substantially followed and adhered to.

V.

That as will more fully appear from the matters and things hereinafter alleged, no proper or sufficient examination or survey of the ground over which said railroad was to be constructed had been made by the defendant or its engineers at the time said map and profile was prepared and furnished to plaintiff as aforesaid; that plaintiff was not informed or in any manner warned or advised at said time that the line or location of said railroad as then established and as shown by said map and profile was not practical or feasible, and that in the construction of same many changes would have to be made and said map and profile would be deviated from in many respects and particulars and to such an extent as would greatly increase the total and unit cost of said work and prevent plaintiff from completing same within the time limit provided for in said above mentioned agreement; that after plaintiff had entered upon the performance of said work, changes were constantly being made which necessitated the moving and placing of greater quantities of materials, also the performance of considerable more work under more burdensome and expensive conditions than was contemplated when said contract was made and signed; that as a result of the

foregoing plaintiff's approximate estimates with respect to the quantities of the various materials to be moved and placed, also the cost of moving and placing same, were entirely too low and said estimates would not have been incorporated in said agreement had plaintiff been fully informed as to the character and amount of work to be done in the actual construction of said railroad as was required of it by defendant's engineers in charge.

VI.

That at the time said agreement between plaintiff and defendant was entered into, and at the time plaintiff entered upon the performance of said work provided for therein, one A. P. Cole was employed by defendant in the capacity of chief engineer and as such, had full and complete charge of said work to and until on or about the 10th day of October, 1919, when he was replaced by one W. J. Norris as such chief engineer; that the said A. P. Cole and W. J. Norris as such chief engineers, or one or the other of them, was at all of the times from herein mentioned the duly authorized agent of the defendant and one or the other of them was constantly present and in absolute charge of said work as it progressed; that neither of said engineers was sufficiently experienced to properly plan, direct or supervise said work; that said lack of experience was manifest in the very inception of said work; that in locating the line for the construction of said railroad, as shown by said map and profile so furnished to plaintiff as aforesaid, serious

and costly errors were made which necessitated many extensive changes as said work progressed from Station to Station; that as a result of said mistake in the location of said line of said railroad and other errors of judgment upon the part of defendant's engineers as said work progressed, which continued during all of the time plaintiff was engaged thereon, plaintiff was constantly being called upon to make changes which were not only costly and burdensome, but greatly delayed the completion of said work; that defendant's engineers were also constantly giving directions and instructions as to the manner and method of performing said work which were not only impractical, but were burdensome and expensive, causing needless loss of time and additional and unnecessary labor, all of which will hereinafter be more fully alleged and shown.

VII.

That shortly after plaintiff and defendant had entered into said above mentioned agreement, to-wit: on or about the 10th day of July, 1919, plaintiff proceeded to make adequate preparations for carrying on said work contemplated by said contract, to a successful conclusion, and within the time limit as provided for in said agreement; that plaintiff procured all necessary machinery, tools, and appliances, including a steam shovel plant, for the construction of said road bed, and moved and placed same upon the ground selected for the construction of same; and also provided itself with an adequate force of labor-

ers, and established a good and sufficient camp for their proper care and maintenance during said operations; that all of the aforesaid preparations were made to carry on the work contemplated by said original map and profile so furnished unto plaintiff by defendant as above alleged and all of said preparations were fully completed on or about the 1st day of August, 1919, when said construction work was actually commenced; that when plaintiff went upon said work for the purpose of perfecting its plans and preparations as aforesaid, it established its camps and located its machinery, steam shovel plant and other equipment in such manner as would insure rapid and efficient work; and all of said plans and preparations were made under the belief and on the assumption that said railroad would be constructed in accordance with said original map and profile, and that the materials to be handled on the various sections or stations of said work, also the depth, width, and extent of the cuts and fills would be as indicated or shown thereon, and that its steam shovel plant and other equipment could be located in such manner as would avoid its being moved back and forth upon said work, thereby avoiding unnecessary delays and expenditures.

VIII.

That after all of the aforesaid preparations had been made plaintiff, accepting said original map and profile as being substantially correct, when locating its steam shovel plant, planned to place same at about

Station No. 161, above Mile 1, and made no plans or preparations for using same in connection with the work to be done on Mile 1; that according to said original map and profile practically all of the work to be performed on Mile 1 (Stations 1 to 152-84) consisted of what is termed "light hand team and wheelbarrow work"; that said map and profile did not show or indicate that a fill would have to be made at about Stations one to four (1 to 4) for a warehouse site, or that the material for making same would have to be hauled a considerable distance, which would involve additional expensive track work; nor did said map and profile show that plaintiff would have to clear and grub said land upon which said warehouse was to be built, or any part of said right-of-way between Stations 0-00 and 9; that plaintiff was not informed that such additional work and labor would be required of it until after it had commenced its operations and had arranged and placed its forces and equipment for carrying on the work as shown on said original map and profile; that said warehouse site was located at about Station 1 to 4, and plaintiff's steam shovel plant was then located at about Station 17, and as there was no suitable material at hand for making said fill for said warehouse site plaintiff was required to and did haul all of said material from about Station 17, or a distance of about 1600 feet, which together with said additional track work required about 14 days more time and increased the cost of constructing that part of said right-of-way between Stations 0-00 to 26-25 from about 39 cents per

cubic yard, as originally estimated, to about 79c per cubic yard; that one of the principal causes for said increase in the cost of said work between said last above mentioned stations was the fact that plaintiff was required to move a portion of its forces and equipment from Station 161 to Station 3, to complete the clearing and grubbing of said warehouse site, also a part of said right-of-way adjacent thereto, which had been let by defendant's chief engineer, A. P. Cole, to certain subcontractors who were not equipped to do said work and who were by reason of said fact delaying plaintiff's operations in making said fill; that the necessary track for making said fill could not be laid until said right of way had been properly cleared and grubbed; that all of the afore-said operations, none of which could have been anticipated by plaintiff when entering into said agreement, not only increased the cost of said work between said Stations 0-00 and 26-25 about \$6220.00 over and above plaintiff's estimates, but delayed the progress of certain other work, which should have been completed during the early fall, to such an extent that it had to be done during the winter or rainy season, under very burdensome and expensive conditions, all of which will be hereinafter more particularly alleged and shown.

IX.

That some time during the latter part of November, 1919, and after plaintiff had, under the supervision of W. J. Norris, defendant's chief engineer,

completed all of that part of said railroad between Stations 0-00 to 26-25 also from Station 100 to 231 and had finished same to the grade shown on said map and profile, and as directed by said engineer, it was for the first time discovered that a part of said finished grade, to-wit: that part of same between Stations 107 and 122, was below high-water level; that upon discovering such condition plaintiff was directed by defendant's said engineer to immediately proceed with preparations for making a sufficient fill between said Stations 107 and 122 to raise said grade above said high-water level; that in order to make such fill it was necessary for plaintiff to move its steam shovel plant, which was then located at Station 231 back to Station 8 West (a distance of about $2\frac{1}{2}$ miles), which was the nearest and most accessible point where suitable material for making said fill could be obtained; that there was no material alongside or immediately adjacent to that part of said road-bed between said Stations 107 and 122 suitable for making said fill, nor was it possible to make said fill at said time by any means or method other than by the use and operation of said steam shovel plant, which under the extremely unfavorable weather conditions existing at said time was a very slow and expensive method; that before entering upon said work and before moving its steam shovel plant from Station 231 back to said Station 8 West for the purposes aforesaid, plaintiff explained to defendant's said chief engineer, that it was not feasible or practical to undertake such work at said time, and that

same should be deferred until weather conditions were more favorable; otherwise said operation would be very difficult, slow and expensive; that notwithstanding the existence of such facts and conditions and without due or any regard to plaintiff's opinions, advice or recommendations with respect thereto, and over plaintiff's serious objection, said engineer insisted that said work be done and that plaintiff proceed with same without delay; that thereupon plaintiff proceeded to move its steamshovel plant from Station 231 back to Station 8 West, which required about 2 days at an expense of \$200.00 per day; that the operation of said steam shovel plant at said Station 8 West was very difficult by reason of the fact that same had to be operated under about two feet of water during extremely cold weather, which caused said material to freeze when placed upon the cars, necessitating the employment of from twenty to thirty more men than was ordinarily used in the operation of same, thereby increasing the cost of making said fill about 60% in excess of what it would have cost had same been made under more favorable weather conditions; that the aforesaid operations were commenced on or about the 6th day of December, 1920, and were not completed until on or about the 15th day of January, 1921, and the cost of finishing said part of said grade was increased about \$5000.00 in excess of what it should have cost.

X.

Plaintiff was also required to perform a considerable amount of work in the construction of that part of said railroad between Stations 152-84 and Station 574-30 which could not have been anticipated when said agreement between plaintiff and defendant was entered into. In many instances the lien or grade was changed after plaintiff's operations were well advanced which invariably increased the amount of work to be done two-fold. That said changes, together with the many errors and mistakes of defendant's engineers in the supervision and management of said work made it impossible for plaintiff to carry on same in an expeditious and economical manner, as planned when said agreement was made and signed, all of which is more fully alleged and shown in detail as follows:

(A) That at the time plaintiff entered into said agreement it planned to have all of said work on said railroad between Stations 152-84 to Station 231 completed before the winter or rainy season had set in, but owing to the delays incident to many changes and extra work required of it in the construction of that part of said right of way between Stations 100-00 to Station 152-84 plaintiff was unable to do any of said work between said first above mentioned stations until sometime during the month of October; that there were a number of cuts and fills to be made between said stations and particularly between Stations 185 and 200, through wet and swampy ground; that practically all of the material to be moved in

this section consisted of what is commonly known as surface material consisting of yellow clay, decayed leaves, roots and other debris, which was very difficult and expensive to handle during the rainy weather; that this particular part of said work was made more difficult and expensive by reason of the fact that defendant's engineer in charge of same failed to provide proper or sufficient drainage; that during the heavy rains water accumulated upon said right of way between said stations which caused said grade to settle and made it necessary to haul rock from Station 231 to strengthen and build up said road bed from about Station 173 to Station 185; otherwise said railroad could not be kept open for the operation of trains in moving the necessary supplies and materials for said work beyond said Station 231; that had defendant's chief engineer provided proper and sufficient drainage for that part of said work and had plaintiff been able to perform same prior to the rainy season, as originally planned, said grade between said Stations 185 and 200 could have been constructed in about 7 less days and at a saving of about \$1600.00.

(B) That plaintiff was required to repeatedly change the grade between Stations 184 and 204 after same had been finished which involved about 3 days additional labor and increased the total cost of that part of said work about \$350.00; that had defendant's engineers been capable and efficient said grade could have been definitely established in the first instance; that all of said work between said stations was under the supervision of defendant's chief engineer, who

caused the grades to be checked at every station as said work progressed; that plaintiff relying upon the competency of said defendant's chief engineer and believing that the said grade as finished in the first instance was correct, moved its steam shovel plant forward thereby making it necessary to finish said grade by hand at a considerably increased cost as above stated.

(C) That in the construction of that part of said railroad between Stations 205-658 to 258-494 plaintiff was required to haul about 7000 yards of material from Station 250 to make a fill between Stations 237 and 248 or a distance of about 1300 feet; that in order to secure such material plaintiff was required to and did open up a borrow pit at Station 250 at an increased cost of about \$500.00, where plaintiffs' steam shovel plant was then being operated through a cut; that said operation, which was not contemplated when said agreement between plaintiff and defendant was made and entered into, required about 12 additional days time to make said fill and increased the cost thereof over plaintiff's original estimate about \$2000.00; that plaintiff's original plans for making said fill were based upon the assumption that all of the material for making same could be obtained alongside and adjacent thereto; that plaintiff, when making an examination of said part of said right of way in conjunction with said original map and profile preliminary to entering into said agreement between plaintiff and defendant, assumed and had the right to assume that defendant had obtained a right of

way over that part of said ground between said Stations 205-658 and 258-494 and that same was of the usual width, to-wit: of about 100 feet and that there would be ample material alongside of said Stations 237 to 248 to make said fill; that plaintiff was not informed to the contrary until after it had moved its forces and equipment upon said part of said work and had commenced its operations; that plaintiff was then informed that the right of way obtained by defendant across said ground was only about 40 feet in width which as defendant well knew was not sufficiently wide to enable plaintiff to secure said material for making said fill alongside or adjacent thereto; that all of the aforesaid changes, delays and additional work increased the total cost of said work between said Stations 205-658 to 258-494 about \$3500.00, and the unit costs about 20 per cent.

(D) That when plaintiff entered upon the construction of that part of said work between Stations 258-494 to Station 311-294 it assumed that same could and would be constructed substantially in accordance with said original map and profile, and proceeded to clear and grub said ground between said stations preliminary to the construction of said part of said road-bed; that after plaintiff had practically finished said clearing and grubbing, and had cleared about 4 acres, which required about 33 days, at a cost of about \$2500.00, defendant informed plaintiff that the line or right of way had been changed, and that it was necessary to construct said railroad farther up into the hills; that such change not only doubled the cost of

clearing and grubbing said part of said right of way, but increased the cost of constructing same about 30 per cent or about \$12,000.00; that had said railroad been constructed substantially as originally planned and over the line as shown by said original map and profile practically all of the materials to be moved between said Stations 285 and 311 could have been cast or dumped over the side of the hill or hills by the steam shovel; that after said line had been changed all of said material moved and handled between said stations had to be hauled on dump cars which required about 9 days more time and increased the total cost of said work about \$1800.00, and the unit costs about 20 per cent.

(E) That between Stations 311-294 and 384-964 plaintiff was required to build about 600 feet of switch or passing track, which was not shown on said original map and profile, nor was plaintiff informed of the necessity of building said additional switch or passing track until after it had commenced work upon said part of said railroad; that as the result of such change the cost of constructing said part of said railroad between said stations was practically doubled; that at the time plaintiff was informed of such change it had already cleared about 5 acres of said ground over which said right of way was to have been constructed before said change was made which required about 35 days time and involved an expenditure of about \$2600.00; that such departure from the original map and profile also necessitated the widening of the cut between Station 369 and 375

about 14 feet, in order to make room for a long switch or passing track, which required about 3 days additional time and increased the cost of said part of said work about \$700.00; according to the original map and profile said cut was to have been only 20 feet wide; that the cost of this part of said work was further materially increased because of the delay in moving plaintiff's steam shovel plant across Sam Downs Creek at Station 380; that when plaintiff reached said station said bridge was not completed and plaintiff was delayed about 2 days in moving said steam shovel plant to the work between Stations 311-294 to Stations 363-848, which delay added to the cost of said work about 20 per cent; that by reason of all of the aforesaid changes, delays and additional work, the total cost of said work between said last above mentioned stations was increased about \$6800.00 and the unit costs about 25 per cent; that a considerable part of the increased cost of said work between said stations was due to the fact that plaintiff's trains which were engaged in hauling said dirt from said cut were being continually held up by the bridge-men, who were at said time engaged in laying deck and tracks on the bridge over Sam Downs Creek at Station 380; that plaintiff was also delayed in the operation of its steam shovel plant about 6 days because of the failure of defendant to have said bridge across Sam Down's Creek at said Station 380 completed when plaintiff was ready to move said steam shovel plant upon said work to Station above 388; that all of the aforesaid changes, delays and addition-

al work increased the total cost of the construction of said work between Stations 366-848 and 384-964 about \$2800.00 and the unit costs about 22 per cent.

(G) That when plaintiff was ready to proceed with the work between Stations 384-964 to 416-664 it was informed that the line or right of way had been changed and that said railroad would have to be constructed further up into the hill; that plaintiff was also informed by defendant's chief engineer in charge that the remainder of said mile between said stations after crossing Sam Downs Creek at Station 380 was to be done by hand as an experiment; that by reason of the change in said line the material to be handled between said stations was much harder and had to be blasted before men could handle same, which would not have been necessary had said material been moved and handled by said steam shovel plant; that after plaintiff's steam shovel plant had crossed the bridge at Sam Downs Creek plaintiff was instructed to make a fill at the east end of said bridge over said Sam Downs Creek, and because of the fact that the cut at Station 389 had already been made by hand plaintiff was required to open up a borrow pit at said Station 389 for the purpose of making said fill; that had plaintiff been permitted to make said cut at said Station 389, with its steam shovel, as originally planned, all of said material moved and handled in making same could have been moved and placed in said fill at the end of said bridge across Sam Downs Creek for substantially the same cost as was incurred in completing said cut and making said fill; that said

changes, delays and additional work increased the total cost of constructing said mile between the first above mentioned stations about \$5000.00 and the unit cost about 35 per cent.

(H) That at the commencement of that part of said work between Stations 416-664 and 469-566 plaintiff was again required to depart from said original map and profile; that the line or right of way was, under the direction of defendant's chief engineer, moved or thrown farther up into the hills in order to reduce the grades and eliminate a number of heavy curves; this change made it necessary to haul a considerable part of said material in making said cuts and fills between said stations instead of dumping or casting same over the side, as was originally planned when said contract between plaintiff and defendant was entered into. That in order to move, handle and place said material in connection with the making of the cuts and fills between said stations a temporary standard track of about 1500 feet in length had to be constructed on said grade, which due to the heavy rains at said time was a very difficult and expensive piece of work; that due to the steep slopes in said cuts there were continual slides as the result of heavy rains which made it necessary to employ a number of men to keep said track clear and in a reasonable state of repair; that the material placed in the fills over which said temporary track was laid was softened by said heavy rains, causing said fills to settle and spread, which also necessitated the employment of a number of men to keep said

track in repair; that as the result of the foregoing additional work all of which, by reason of same having been delayed through no fault of plaintiff until the rainy season had set in, necessitated the performance of same under more difficult, burdensome and expensive conditions, than was contemplated and agreed upon, increased the total cost of constructing that part of said railroad between Stations 416-664 and 469-566 about \$7600.00, and the unit costs about 30 per cent.

(I) That practically all of the line or right of way between Stations 469-566 and 574-30 was also changed and thrown farther up into the hills and higher and steeper cuts were encountered which necessitated the moving and handling of above 7000 yards more material, also an overhaul of about 50,000 yards, when making cuts and fills between said stations than was shown on said original map and profile; that a considerable part of said material to be moved in making said cuts had to be hauled instead of being cast or dumped over the side, which increased the total cost of said work \$5600.00, and the unit costs about 30 per cent; that had plaintiff been able to cast or dump said material over the side practically all of said work between said stations would have been completed before the rainy season at a saving of about \$6000.00.

XI.

That as indicated by the following comparative statement the total quantities of the various materials

moved, handled and placed, also amount of clearing, grubbing and other work performed by plaintiff in the manner and under the conditions related in Paragraphs 1 to 10 above, was considerably in excess of what was shown on said original map and profile, or than was contemplated when said agreement for the construction of said railroad was entered into:

Actual Amount of Clearing and Grubbing Done by Plaintiff, also Quantities of Materials Handled.		Estimates as Shown on the Original Profile.	Excess over original Estimates as shown on Profile.
Clearing	64.79 Acres	49 Acres	15.79 Acres
Grubbing	38.15 Acres	15 Acres	23.15 Acres
Grading (Com) ..	183,381.4 Cu.Yds.	121,427 Cu.Yds.	61,954.4 Cu.Yds.
Grading (S.R.) ..	7,806 Cu.Yds.	3,340 Cu.Yds.	4,466 Cu.Yds.
Grading (I.R.) ..	1,587 Cu.Yds.	1,300 Cu.Yds.	287 Cu.Yds.
Overhaul	680,229 Cu.Yds.	179,500 Cu.Yds.	500,729 Cu.Yds.

XII.

That prior to entering into said agreement plaintiff made a full, careful and complete survey of said ground over which said road bed was to be completed, and based upon said survey and examination, in conjunction with the information disclosed by said original map and profile, so furnished unto plaintiff by defendant, made an approximate estimate of the amount of work to be done, also probable cost thereof, and amount of time it would require to complete same; that in making said estimates plaintiff assumed and had the right to assume that defendant's plans for the building of said railroad, as evidenced by said original map and profile, had been carefully considered and were substantially correct, and that after same had been accepted and acted on by plaintiff there would be no such material or extensive changes

or departures therefrom in the performance of said work as alleged and shown in the preceding paragraphs; and plaintiff further alleges that in making said estimates due allowance was made for a reasonable amount of extra or additional work as a result of changes in the alignment, grades, forms and methods of construction, and other unforeseen difficulties and contingencies, but did not and could not have anticipated any such increase in the amount of yardage or other work as is shown in said Paragraphs VII to XI above, and as is summarized in the comparative statement set out in Paragraph XI above; nor could plaintiff have anticipated the vast amount of additional work required of it as the result of the many errors and mistakes of defendant's engineers, or as the result of its being compelled to perform parts of said work under more difficult or burdensome conditions, than was contemplated when said agreement was signed.

XIII.

That under the terms and conditions of said agreement between plaintiff and defendant for the construction of said railroad road bed, plaintiff was required to complete the construction of same on or before the 1st day of January, 1920, and at a cost which would not exceed an agreed base cost which was to be determined by the mathematical process of multiplying the final pay quantities by the fixed and agreed unit prices for said work, all of which is fully provided for in said agreement; that because of the matters and things alleged and shown in the pre-

ceding paragraphs, and in conjunction with the fact that during the progress of said work plaintiff's forces were constantly being disorganized and rendered less efficient and its equipment rendered idle by said inefficient method of defendant's engineers in the direction and management of said work, plaintiff was unable to keep and perform its agreement in either of said particulars; that it was engaged upon said work from about the 1st day of August, 1919, until on or about the 1st day of August, 1920, or about eight months longer than was provided for in said agreement for the completion of said road bed as a whole; that the total cost of said road bed in so far as same was completed by plaintiff was two hundred thirty-two thousand, six hundred fourteen and 40/100 (\$232,614.40) dollars, and the base cost of said part of said work so completed by plaintiff as determined in the manner provided for in said agreement was one hundred twenty-four thousand, four hundred sixty-five and 56/100 dollars, (\$124,465.56); that had plaintiff been permitted to proceed with and carry on said work substantially in accordance with said original map and profile and under the condition originally contemplated, all that part of said road bed between Station 0-00 and 574-30 could have been completed within approximately seven months, at a cost of about one hundred thousand dollars (\$100,000.00) instead of two hundred thirty-two thousand, six hundred fourteen and 40/100 dollars (\$232,614.40) which was the amount actually expended in the construction of said part of said roadbed.

XIV.

That on or about the 1st day of August, 1920, and after plaintiff had completed all of that part of said roadbed up to and including Station 594-30 said work was taken over by defendant and plaintiff was relieved from any further responsibility in connection therewith or for the completion of the remainder of said railroad; that all of the work so performed by plaintiff in connection with the construction of said part of said road bed up to and including Station 574-40 was performed in a good and workmanlike manner and to the entire satisfaction of defendant's engineers, A. P. Cole or W. J. Norris, one or the other of whom was in absolute charge and control of said work from the time plaintiff entered upon the performance of said agreement until on or about the said 1st day of August, 1920; that at said time and when said work was so taken over by defendant no charge or claim was made by defendant, or anyone in, for or on its behalf, that plaintiff was in any way in default in the performance of said agreement or that said work so performed by it was in any way defective or unsatisfactory, and defendant on said date accepted all of said work and has ever since retained same and now enjoys the benefits thereof, and makes no claim or complaint of any kind or character that said work or any part thereof is in any way defective or that same was not performed in a good and workmanlike manner.

XV.

That said agreement between plaintiff and defendant is what is termed "cost plus a percentage agreement" and with respect to plaintiff's compensation contains the following provisions:

"On or before the first of each month the contractors shall furnish the Chief Engineer signed vouchers for all moneys spent by them on account of this work during the preceding month, and upon approval the Chief Engineer shall so certify thereon in writing, and upon such approval there shall be added a profit of five per cent (5%) to all such vouchers and the amount thus found shall on or before the 10th day of the following month be paid to the contractors by the owners, and the balance due by virtue of any further profit on said vouchers shall be retained by the owners until the completion and acceptance of the work and the final estimates have been made and within 30 days thereafter the owners shall pay to the Contractors the balance due by virtue of the profits.

"The contractors shall be reimbursed on all vouchers approved by the Chief Engineer and shall receive the face amount thereof.

"Hereto attached is a sheet entitled "Approximate quantities" such quantities having been made up from preliminary estimates and before accurate measurements could be made and the final or pay quantities (in each and every

item) may be more or less than these approximate quantities.

“To each and every item shown upon said approximate quantity sheet there has been affixed an agreed unit price and from these unit prices and the final or pay quantities there shall be determined a BASE COST for the complete work as a whole; then should the final cost of the complete work amount to more than the base cost the contractors shall pay 25% and the owners 75% of any increased cost above the base cost, (provided that the contractors in any case shall not receive less than 5% profit on the base cost) and in the event that the whole work costs less than the base cost, then the contractors shall receive 25% and the owners shall receive 75% of any such savings, (provided that the contractors in any case shall not receive more than 15% profit on the base cost).

That because of the numerous and vital changes made in the grade of said part of said road bed, insofar as same was completed by plaintiff, in conjunction with the many mistakes, errors and defaults of the defendant in the supervision and management of said work, as hereinbefore alleged and shown, plaintiff was required to perform a vast amount of additional work which was not considered or contemplated when said agreement was made and entered into, also to perform same under different conditions and at different times and in a different manner, and under much

more difficult and burdensome conditions than was contemplated or agreed upon when said agreement was made and signed, and by reason thereof, the above quoted provisions of said agreement with respect to plaintiff's compensation do not limit or control the amount thereof, and plaintiff cannot now be required to accept in full settlement of its services, a sum which would be equivalent to only 5% of the base cost of said part of said work so completed by plaintiff, or 5% of the total amount of plaintiff's expenditures as represented by vouchers rendered monthly to defendant during the time plaintiff was so engaged on said work, but in addition thereto is entitled to have and recover of and from the defendant as and for its compensation for the labor and services performed by it in and about the construction of said road bed so completed, such further sum as will when added to the profit heretofore paid plaintiff monthly during the progress of said work compensate plaintiff in full for said labor and services; that a reasonable compensation to be allowed plaintiff in full for its said labor and services, including said 5% heretofore paid, was and is a sum which in the aggregate would be equivalent to 15% of two hundred thirty-two thousand, six hundred fourteen and 40/100 (\$232,614.40) dollars, the total or final cost of said part of said roadbed so completed by plaintiff, or thirty-four thousand, eight hundred ninety-two and 16/100 dollars (\$34,892.16).

XVI.

That by reason of the foregoing defendant is indebted to plaintiff on account of the labor and services performed in the total sum of thirty-four thousand and eight hundred ninety-two and 16/100 dollars (\$34,892.16) no part of which has been paid, save and except nine thousand eight and 03/100 dollars (\$9008.03), in the amounts as follows:

July, 1919	\$ 206.69
August, 1919	597.41
September, 1919	584.55
October, 1919	902.13
November, 1919	693.51
December, 1919	375.85
January, 1920	466.72
February, 1920	431.52
March, 1920	500.14
April, 1920	673.81
May, 1920	1023.01
June, 1920	775.77
July, 1920	636.95
August, 1920	709.58
September, 1920	370.84
October, 1920	59.55

leaving a balance of twenty-five thousand eight hundred eighty-four and 13/100 (\$25,884.13) now due and unpaid.

XVII.

That prior to the commencement of this action demand was duly made upon the defendant for the

payment of the balance due on said statement, to-wit: twenty-five thousand, eight hundred eighty-four and 13/100 dollars (\$25,884.13) but defendant has failed, refused and neglected to pay same or any part thereof, and still refuses so to do.

FOR A FURTHER AND SEPARATE CAUSE OF ACTION against the above named defendant, plaintiff alleges:

I.

That at all of the times herein mentioned, plaintiff was and now is a corporation organized and existing under the laws of the State of Washington, having its principal office and place of business in the City of Spokane, said State.

II.

That at all the times hereinafter mentioned, defendant was and now is a corporation organized and existing under the laws of the State of Michigan and having its principal office and place of business in the City of Detroit of said State; and at all of the times hereinafter mentioned, was and now is duly authorized to transact and carry on the business for which it was formed within the State of Oregon.

III.

That on or about the 25th day of June, 1919, plaintiff and defendant made and entered into an agreement in writing wherein and whereby, for the remuneration therein stated, plaintiff undertook and agreed to furnish all labor and perform all work

necessary or as may be required of it to construct 12½ miles of railroad road bed in accordance with a certain map and profile (which had prior thereto been submitted to plaintiff by defendant) from Tillamook Bay to Kilches River, thence up the Kilches River to Section three (3) Township one (1) North, Range Nine (9) West, W. M., in Tillamook County, Oregon.

IV.

That thereafter, to-wit, on or about the 1st day of August, 1919, plaintiff entered upon the performance of said contract and proceeded with the construction of said road bed referred to therein, and continued upon said work until on or about the 1st day of August, 1920, when said construction work was taken over by defendant, and plaintiff was relieved from further performance of said contract.

V.

That between said above mentioned dates and during the progress of said work, plaintiff at defendant's special instance and request and for its sole use and benefit, made certain advances and expenditures for labor, material and supplies, also for tools and equipment and repairs thereto in connection with the construction of said road bed, amounting in all to eighteen thousand, nine hundred seventy-one and 90/100 dollars (\$18,971.90), all of which defendant agreed to repay within a reasonable time after same were so made; that there is hereto attached and marked Exhibit "A" and thereby made a part of this

complaint, a true and correct itemized statement of all of said advances and expenditures.

VI.

That there is now due and owing unto plaintiff from defendant, for said advances and expenditures a total of eighteen thousand, nine hundred seventy-one and 90/100 dollars (\$18,971.90), demand for which was duly made upon defendant prior to the commencement of this action, but defendant has failed, refused and neglected to pay same or any part thereof and continues so to do.

WHEREFORE plaintiff demands judgment against defendant:

1. For twenty-five thousand, eight hundred eighty-nine and 16/100 dollars (\$25,888.16) on its first cause of action, and

2. For eighteen thousand, nine hundred seventy-one and 90/100 dollars (\$18,971.90) on its second cause of action, and

3. For its costs and disbursements herein.

DOBSON & KRIMS,
Attorneys for Plaintiff.

EXHIBIT "A"

THE WHITNEY COMPANY, DR.

Statement of bills due as per contract.

Item 1	Camp equipment	\$ 2661.91
	10 Stoves	\$ 224.25
	Dishes, etc.	698.67
	Blankets	388.75
	Mattresses	45.00
	6 tents	709.93
	16 flys for tents.....	595.31
		<hr/>
		\$2661.91
" 2	Loading outfit at Port Angeles.....	325.00
" 3	Money advanced to Mark Sweeney..	2007.18
" 4	Money spent ballasting line.....	5344.70
" 5	Hiner & Reed repair bill.....	881.10
" 6	Credit due on tools returned to W. Co.	746.95
" 7	Loading material for track laying....	793.45
" 8	Repairs to outfit at Vancouver Yard	3500.00
" 9	Approximate percentage on groc- eries	2712.71
		<hr/>
		\$18973.00
Item 1	This was extra boarding house and camp equipment purchased by R. F. & W. to take care of additonal men, over and above the number provided for in contract.	

- “ 2 Additional charge for loading outfit at Port Angeles. This amount was not included in the charge for loading when bills were presented to Whitney Co.
- “ 3 Money advanced to Mark Sweeney who had contract from Whitney Co., for clearing right of way and putting in culverts. Contract made with Mr. W. J. Norris.
- “ 4 Money spent by R. F. & W. ballasting line, up to time work was taken over by Whitney Co.
- “ 5 To cover money paid to Hiner & Reed for repairs to Steam Shovel water tanks, while shovel was being held up waiting for bridge over Sam Down's creek.
- “ 6 Amount due on tools returned to Whitney Co. These tools were charged to R. F. & W. and used on track laying, then turned back to Whitney Co.
- “ 7 Charges for loading track material at Whitney yard.
- “ 8 Repairs to 1 steam shovel and 18 dump cars and 2 locomotives. This work necessary to put outfit in same state of repair as when it went on Whitney Co. contract.
- “ 9 For 5% on money spent by Whitney Co., on boarding house supplies, this amount arrived at by board deduction on pay-rolls from Dec. 1919, to Oct. 1920, deduction for board

amount to \$54254.45. R. F. & W. were not buying the groceries.

And prior thereto, to-wit, June 15, 1923, there was duly filed in said court an answer to plaintiff's complaint said answer thereafter, to-wit, on the said 17th day of October, 1923, being amended by inserting therein an additonail page designated as page 2a, and after being so amended pursuant to stipulation of the parties, was deemed to be an answer to said amended complaint.

(TITLE)

ANSWER

I.

Admits the allegations contained in paragraphs I and II thereof.

II.

Denies each and every allegation contained in paragraph III thereof except as hereinafter alleged.

III.

Admits that the plaintiff, prior to entering into said agreement, made an examination of the ground over which the railroad mentioned in the complaint was to be constructed, and except as so admitted and hereinafter alleged denies each and every allegation contained in paragraph IV thereof.

IV.

Denies each and every allegation contained in paragraph V thereof except as hereinafter alleged.

V.

Admits that on the 24th day of June, 1919, A. P. Cole was employed by the defendant in the capacity of "chief engineer" in connection with the work on the roadbed mentioned in the complaint, and that he so remained until in October, 1919, when he was replaced by W. J. Norris, and except as so admitted and hereinafter alleged, the defendant denies each and every allegation contained in paragraph VI thereof.

VI.

Denies each and every allegation contained in paragraph VII thereof except as hereinafter alleged.

VII.

Denies each and every allegation contained in paragraph VIII thereof except as hereinafter alleged.

VIII.

Denies each and every allegation contained in paragraph IX thereof except as hereinafter alleged.

IX.

Denies each and every allegation contained in paragraph X thereof except as hereinafter alleged.

X.

Denies each and every allegation contained in paragraph XI thereof except as hereinafter alleged.

XI.

Admits that under the terms of said contract the construction of the road bed described in the complaint was to be completed by the 1st day of January, 1920, that same was not completed until many months thereafter, and that the plaintiff prior to the 24th day of June, 1919, made a survey and examination of the ground over which said road bed was to be constructed, and except as so specifically admitted and hereinafter alleged, denies each and every allegation contained in paragraph XII thereof.

Amended by interlineation to read as follows:

XI.

Admits that the plaintiff prior to the 24th day of June, 1919, made a survey and examination of the ground over which said roadbed was to be constructed, and, except as so specifically admitted or hereinafter alleged, denies each and every allegation contained in paragraph XII thereof.

XII.

Denies each and every allegation contained in paragraph XIII thereof except as hereinafter alleged.

Amended by interlineation to read as follows:

XII.

Admits that under the terms of said contract the construction of the roadbed described in the complaint was to be completed by the first day of Janu-

ary, 1920; that the same was not completed by said date nor by October 1, 1920, when plaintiff ceased work on said roadbed; and, except as so specifically admitted or hereinafter alleged, denies each and every allegation contained in paragraph XIII thereof.

XIII.

Alleges that about the 1st day of October, 1920, the defendant itself took over the work on the roadbed mentioned in the complaint, and except as so alleged and hereinafter alleged, denies each and every allegation contained in paragraph XIV thereof.

Amended by interlineation to read as follows:

XIII.

Alleges that about the 1st day of October, 1920, the defendant itself took over the work on the roadbed mentioned in the complaint, and except as so alleged and hereinafter alleged, denies each and every allegation contained in paragraph XIV thereof.

XIV.

Denies each and every allegation contained in paragraph XV thereof except as hereinafter alleged.

Amended by interlineation to read as follows:

XIV.

Denies that the plaintiff is entitled to any sum whatsoever in addition to what it has already received to reasonably compensate it for labor and serv-

ices performed for the defendant, and denies each and every other allegation contained in paragraph XV thereof except as hereinafter alleged.

XV.

Denies that the plaintiff is entitled to any sum whatsoever in addition to what it has already received to reasonably compensate it for labor and services performed for the plaintiff and denies each and every other allegation contained in paragraph XVI thereof, except as hereinafter alleged.

Amended by interlineation to read as follows:

XV.

Denies that the defendant is indebted to the plaintiff in the sum of \$34,892.16 or in any sum whatsoever; denies that there is now due and unpaid from the defendant to the plaintiff the sum of \$25,884.13 or any sum whatsoever; and denies each and every other allegation contained in paragraph XVI thereof except as hereinafter alleged.

XVI.

Denies that the defendant is indebted to the plaintiff in the sum of \$41,115.44 or any other sum whatsoever, denies that there is now due and unpaid from the defendant to the plaintiff \$32,007.41 or any sum whatsoever, and denies each and every other allegation contained in paragraph XVII thereof, except as hereinafter alleged.

Amended by interlineation to read as follows:

XVI.

Denies each and every allegation contained in paragraph XVII thereof except as hereinafter alleged.

XVII.

Denies each and every allegation contained in paragraph XVIII thereof, except as hereinafter alleged.

For a FIRST FURTHER AND SEPARATE ANSWER AND DEFENSE TO PLAINTIFF'S FIRST CAUSE OF ACTION the defendant alleges:

I.

That on or about the 24th day of June, 1919, the plaintiff and the defendant entered into what is known as a "cost plus" contract by which the plaintiff undertook to construct for the defendant 12½ miles of railroad roadbed from Tillamook Bay to Kilches River, thence up the Kilches River into Section Three, Township One, north range Nine West, W. M., all in Tillamook County, Oregon, a copy of which contract, marked Exhibit "A", is attached hereto and made a part hereof.

II.

That there was submitted to the plaintiff by the defendant prior to the execution of said instrument a certain map and profile which proposed to indicate and did indicate the approximate alignment of said roadbed, and in a general and reasonably close way,

the character and amount of work to be done in the construction of said roadbed, and it was expressly stated to and clearly understood by the plaintiff that such map and profile was the result of a mere preliminary survey and proposed to indicate only approximately the alignment of said roadbed, and only in a general way the character and amount of work to be done in the construction of said roadbed.

III.

That in and by said contract it is provided:

“The Engineer assumes through this warning, that the Contractors have examined the ground over which the railroad is to be built, and knew at the time he entered into this contract the amount of work to be done, the difficulties to be encountered, the hardness of all materials to be moved, handled and put in place, together with all other work to be done and the quantities thereof to bring the railroad to a full and satisfactory completion by the time herein set forth for its completion.

“The Contractors accept this work, solely and unreservedly upon their own information, and without reference to any preliminary estimate of quantities, profiles, or other papers handed to bidders before the contract for doing this work is let and the Chief Engineer reserves the right to alter and change the alignment, grades, forms and methods of construction as shown on the

maps and profiles and he may increase or decrease any and all approximate **quantities** as shown on the preliminary estimate and the contractors hereby waive all claim to any anticipated profits, or damages owing to any such changes."

IV.

That the plaintiff prior to the execution of said instrument did in fact make an examination of the ground where said road bed was to be constructed as shown by said map and profile and made its own estimate of the amount and character of work to be done and the methods of construction that would be necessary, knowing and understanding that the alignment and grades on said map and profile were only approximate and not final or intended to be final and understanding and expecting that in the actual construction of said road bed, both the alignment and grade would be deviated from and changed within reasonable limits, and that on the basis of its own investigation so made as to the amount and character of the work, the nature of the materials to be moved, and the topography of land, the plaintiff entered into said contract.

V.

That the alignment and grades shown on said map and profile were, under the defendant's instructions, deviated from to some degree in the actual construction of the road bed, but the deviation and departure was inconsiderable and within the contemplation of the parties when they entered into said contract.

VI.

That said map and profile indicated approximately and within reasonable limits the character and amount of work necessary to be performed in the construction of said road bed according to the terms of said contract; and that if the amount or character of the work actually done exceeded or varied from the amount and character shown on said map and profile to a greater extent then was contemplated by the parties when entering into said contract, such was due to the inefficiency, incapacity, errors and mistakes of the plaintiff and its agents, to the fact that the plaintiff consistently and against the advice and instructions of the defendant excavated large quantities of material in excess of the amount necessary for the construction of said road bed according to said contract, and consistently and against the advice and instructions of the defendant hauled large quantities of materials a great distance beyond that which was necessary; to the fact that excavated material was frequently wasted, and the plaintiff's workmen idled on the job and to the fact that wasteful, inefficient and lazy practices were indulged in by the plaintiff, all again the requests and instructions of the defendant.

VII.

That at the time of the execution of said contract the plaintiff was familiar with the climatic conditions in the vicinity where said road bed was to be constructed and knew what character of weather to ex-

pect, and the weather encountered during said construction work was no different from the weather the plaintiff should have anticipated when entering into said contract.

VIII.

That plaintiff by reason of its incompetency, inefficiency and mistakes and lack of diligence, failed to complete said road bed on or before January 1, 1920, as was provided in said contract, and instead had by October, 1920, constructed only nine miles of said road bed, at which time, because of the incompetency, inefficiency and wastefulness of the plaintiff, the defendant itself under the terms of the contract and with the consent of the plaintiff took over the construction of said road bed, and thereafter the plaintiff did nothing further toward the construction thereof.

IX.

That for that portion of said road bed constructed by the plaintiff, the final cost of the labor and materials covered by said contract, including all expenditures by the plaintiff as evidenced by vouchers submitted to the defendant was \$156,508.59, and the plaintiff was fully reimbursed by the defendant for every cent of said sum expended by it and in addition was paid by the defendant as profit the sum equal to 5% of said \$156,508.59, namely \$7825.43; and that the base cost of said portion of said road bed constructed by the plaintiff, as determined in the

manner provided for in said contract, was less than \$156,508.59.

X.

That in and by said contract it is provided:

“On or before the first of each month the contractors shall furnish the Chief Engineer signed vouchers for all moneys spent by them on account of this work during the preceding month, and upon approval the Chief Engineer, shall so certify thereon in writing, and upon such approval there shall be added a profit of five percent (5%) to all such vouchers and the amount thus found shall on or before the 10th day of the following month, be paid to the contractors by the owners, and the balance due by virtue of any further profit on said vouchers shall be retained by the owners until the completion and acceptance of the work and the final estimates have been made, and within thirty days thereafter the owners shall pay to the contractors the balance due by virtue of the profits.

The contractors shall be reimbursed on all vouchers approved by the Chief Engineer and shall receive the face amount thereof.

Hereto attached is a sheet entitled “approximate quantities” such quantities having been made up from preliminary estimates and before accurate measurements could be made and the final or pay quantities (in each and every item),

may be more or less than these approximate quantities.

To each and every item shown upon said approximate quantity sheet there has been affixed an agreed unit price and from these unit prices and the final or pay quantities there shall be determined a BASE COST for the complete work as a whole; then should the final cost of the complete work amount to more than the base cost the contractor shall pay 25% and the owners 75% of any increased cost above the base cost (provided that the contractors in any case shall not receive less than 5% profit on the base cost), and in the event that the whole work costs less than the base cost, then the contractors shall receive 25% and the owners shall receive 75% of any such saving (provided that the contractor in any case shall not receive more than 15% profit on the base cost)."

XI.

That in and by said contract it is provided:

"Culverts and log bulkheads; the owners shall furnish all culvert pipe, and drift bolts for log culverts and bulkheads, f. o. b. Idaville, and the contractor shall receive, unload, cart, put in place or construct all culverts, log culverts and bulkheads, and the owners shall pay to the contractors the cost of all such work plus a profit of ten percent thereon, and such costs and profits shall

not be included in the base cost of the whole work."

That the defendant paid to plaintiff the full cost of all the work done by it under the last above quoted provision of said contract, plus a profit of 10% thereon.

XII.

That as provided in said contract the defendant paid to the plaintiff as rental for a steam shovel outfit and equipment the sum of \$1500 each and every month during all time the same was in use, said rental payments totaling \$21,500.

XIII.

That aside from said road bed contract the plaintiff and the defendant entered into an agreement by which the plaintiff undertook to lay the ballast on said road bed, and the defendant paid to the plaintiff the full amount provided for in said ballast agreement for all work performed thereunder.

XIV.

That aside from said road bed contract the plaintiff and the defendant entered into an agreement by which the plaintiff undertook to lay the track on said road bed and the defendant paid to the plaintiff the full amount provided for in said track-laying agreement for all work performed thereunder.

XV.

That a small amount of labor not covered by any of the contracts or agreements hereinbefore mentioned was furnished by said defendant, under an agreement between the plaintiff and defendant according to which the plaintiff was to furnish such labor when called upon and the defendant to pay the plaintiff therefor the cost thereof to the plaintiff plus a profit of 10% of said cost, and the defendant paid to the plaintiff the full amount provided for in said agreement for said labor furnished.

XVI.

That the sums paid to the plaintiff by the defendant for the services performed and labor and material furnished under said contracts and agreements and otherwise, were in each case the amounts provided for in said agreements and constituted a fair and reasonable and full compensation for the services performed and the labor and materials furnished, and the defendant has fully compensated the plaintiff for all work done and materials furnished for it under said agreements and on all other accounts.

For a SECOND FURTHER AND SEPARATE ANSWER AND DEFENSE to plaintiff's FIRST CAUSE OF ACTION, the defendant alleges:

I.

That on or about the 24th day of June, 1919, the plaintiff and the defendant entered into what is known as a "cost plus" contract by which the plain-

tiff undertook to construct for the defendant 12½ miles of railroad road bed from Tillamook Bay to Kilches River, thence up the Kilches River into Section Three, Township One, North Range Nine West, W. M., all in Tillamook County, Oregon, a copy of which contract, marked Exhibit "A," is attached hereto and made a part hereof.

II.

That it is provided in said contract marked Exhibit "A" that the defendant's chief engineer "may take final notice as umpire in all questions, matters and things arising under this agreement, and his acts in the premises shall hold precedence to the rights of the contractors or any of his agents."

I. I.

That defendant's chief engineer has taken notice as umpire of and honestly and reasonably investigated and considered the claims of the plaintiff and the matters in dispute between the plaintiff and defendant in this action, and after said careful and honest investigation and consideration has determined, decided and advised that the plaintiff's claims in said respect are improper and unwarranted, that said contract marked Exhibit "A" was not deviated or departed from by the defendant or under the defendant's instructions or with its consent, that the construction was done under said contract and the defendant fully performed its obligations thereunder and fully and fairly compensated the plaintiff for all the services

performed and labor and materials furnished in said construction, and owes the plaintiff nothing.

For a THIRD FURTHER AND SEPARATE ANSWER AND DEFENSE to plaintiff's FIRST CAUSE OF ACTION the defendant alleges:

I.

That between June, 1919, and October, 1920, plaintiff furnished certain labor and materials in connection with the construction of the road bed mentioned in the complaint and the laying of ballast and track on said road bed, and during all said times there were monthly statements rendered and settlements made between plaintiff and defendant on account thereof, and at such settlements itemized accounts were rendered and an account stated between the plaintiff and the defendant, and the plaintiff at no time until long after October, 1920, made an objection to said accounts or claimed that the defendant owed it additional compensation and the plaintiff is now estopped to deny the correctness of said settlements.

For a FOURTH FURTHER AND SEPARATE ANSWER AND DEFENSE to plaintiff's FIRST CAUSE OF ACTION, and by way of counterclaim, the defendant alleges:

I.

That the defendant is now and at all times herein mentioned has been a corporation duly created, organized and existing under the laws of the State of

Michigan and qualified to do business as a foreign corporation in the State of Oregon.

II.

That the plaintiff is now and at all times mentioned herein has been a corporation organized and existing under and by virtue of the laws of the State of Washington.

III.

Realleges the matters contained in paragraph 1 of the First Further and Separate Answer and Defense to plaintiff's First Cause of Action.

IV.

That the plaintiff entered upon the construction of said road bed, but prosecuted said work so inefficiently, incompetently and wastefully and with such an inadequate supply of labor and equipment that only a small portion of said road bed was constructed by January 1, 1920, whereas plaintiff could have and should have under the terms of the contract completed the road bed by that date; and only nine miles thereof was constructed by October, 1920, at which time the defendant by reason of the above mentioned matters took over the construction under the provision therefor in the contract and with the consent of the plaintiff. That beginning with the time the plaintiff entered upon the construction of said road bed, the defendant requested, urged and demanded that the plaintiff prosecute the same diligently and effi-

ciently and in accordance with the terms of said contract but the plaintiff steadfastly failed, and refused to do so and disregarded said requests and instructions of the defendant, and the plaintiff unnecessarily and in violation of the terms of said contract delayed the construction of said road bed for a period of many months beyond the time provided in said contract; that by reason of the aforesaid delay occasioned by plaintiff's disregard of the terms of said contract and the incompetent and inefficient manner in which said work was prosecuted, a certain steam shovel outfit and accompanying equipment mentioned in said contract was employed for nine months longer than would have been necessary had plaintiff prosecuted said construction competently and diligently and according to the terms of the contract, and during said nine months the defendant was required to pay as a rental on said outfit and equipment the sum of \$1500 per month, making a total of \$13,500; that in the course of the construction work the plaintiff unnecessarily and wastefully overhauled at least 93,150 cubic yards of material in excess of the amount required to be done, thereby causing the defendant an unnecessary expenditure of \$2,794.00, all in violation of the terms of said contract; and that in the course of said construction work plaintiff wastefully and unnecessarily excavated at least 13,984 cubic yards of common excavation in excess of the amount required to be done by it, thereby causing the defendant an unnecessary expenditure of \$9,788.80 all in violation of the terms of said contract.

V.

That the defendant duly made all payments required of it to be made under said contract and performed all acts and conditions required of its under said contract, except such as were waived by the plaintiff.

Defendant answers the SECOND CAUSE OF ACTION contained in plaintiff's complaint as follows:

I.

Admits paragraphs I and II thereof.

II.

Realleges the matter contained in paragraph I of the defendant's First Further and Separate Answer to plaintiff's First Cause of Action, and except as so alleged, denies each and every allegation contained in paragraph III of plaintiff's Second Cause of Action.

III.

Alleges that the plaintiff entered upon the performance of said contract attached hereto and marked Exhibit "A", and that about October 1, 1920, said construction was taken over by the defendant and the plaintiff was relieved of all further construction work under said contract, and except as so alleged, denies each and every allegation contained in paragraph IV of plaintiff's Second Cause of Action.

IV.

Denies each and every allegation contained in paragraph V of the plaintiff's Second Cause of Action.

V.

Answering paragraph VI of plaintiff's Second Cause of Action, the defendant denies that there is now owing from defendant to the plaintiff the sum of \$18,973.00 or any sum whatsoever for advances and expenditures or on any other account whatsoever, and denies that demand was made upon the defendant for said sum of \$18,973.00 or any other sum in excess of \$15,216.29, and except as admitted, denies each and every allegation contained in said paragraph VI.

WHEREFORE defendant prays that plaintiff take nothing by its complaint and that the defendant have and recover from the plaintiff judgment for the sum of \$26,082.80 and its costs and disbursements herein.

DOLPH, MALLORY, SIMON & GEARIN
and EDGAR FREED,

Attorneys for Defendant.

EXHIBIT "A"
CONTRACT

FOR THE CONSTRUCTION OF A RAILROAD
ROAD BED

under a

COST PLUS A PERCENTAGE AGREEMENT

From

Tillamook Bay to Kilches River, thence up Kilches
River into Section 3, T. 1 N. R. 9 W. in Tillamook
County, Oregon

—————000000—————

THIS AGREEMENT, made and entered into this the 24th day of June, one thousand nine hundred and nineteen, by and between The Whitney Company, a corporation, authorized to do business within the State of Oregon, "Party of the First Part" hereinafter called "Owners" and Rajotte, Fobert, and Winters, their, or his heirs, executors or assigns of the City of Spokane, Conuty of Spokane, State of Washington, "Party of the Second Part" hereinafter called "contractors."

NOW THEREFORE, in consequence of the covenants, agreements and payments to be made by the owners, the contractors hereby covenant, agree, undertake and promise to do all the clearing, grubbing, grading and finishing of the grade surface ready for track laying and ballast, and putting in all culverts and constructing all bulkheads and all other

work necessary to the finished grade, of twelve and one-half miles ($12\frac{1}{2}$) including passing tracks, wyes, and interchange track of railroad, complete in all its details, and give personal attention to and use his best knowledge and ability due to his past experience in similar construction, to prosecute the work as economically and without unnecessary expense, as may be consistent with substantial and workmanlike construction in each and every detail, and procure an efficient and experienced organization of overseers and workmen, and use his ability to keep harmony and good feeling among said overseers and workmen and towards the owners and owners' agents, and carry on the work uninterruptedly, and with such diligence and force so as to bring the road bed to a full completion on or before the first day of January, 1920, providing, however, that the owner shall upon the signed and written contract at once deliver to the contractors for construction purpose possession of the right of way over which the said road bed is to be built. Also provided that the owners keep the contractors well supplied with such materials and tools as is the owners' duty under this contract to supply.

In the case of strikes, fires, floods, and other uncontrollable causes due to nature, then the above time limit may be extended to an amount sufficient to cover any time lost through any such causes and the contractors waive all claim against the owners. Also the owners waive all claim against the contractors for any loss due to any such causes.

The contractors agree that a Chief Engineer as agent for the owners during the performance of the work covered by this contract, is hereby expressly authorized to superintend, design and direct the construction of and pass upon the quantities and qualities of all materials and workmanship, the manner in which any work may be done and the equipment and tools used thereon in each and every detail, together with all other matters incident to the work and he may take final notice as umpire in all questions, matters and things arising under this agreement, and his acts in the premises shall hold precedence to the rights of the contractors or any of the agents.

The Engineer assumes through this warning, that the contractors have examined the ground over which the railroad is to be built, know at the time he entered into this contract the amount of work to be done, the difficulties to be encountered, the hardness of all materials to be moved, handled and put in place, together with all other work to be done and the quantities thereof to bring the railroad to a full and satisfactory completion by the time herein set forth for its completion.

The contractors accept this work, solely and unreservedly upon their own information, and without reference to any preliminary estimate of quantities, profiles, or other papers handed to bidders before the contract for doing this work is let and the Chief Engineer reserves the right to alter and change the alignment, grades, forms and methods of construc-

tion as shown on the maps and profiles, and he may increase or decrease any and all approximate quantities as shown on the preliminary estimate and the contractors hereby waive all claim to any anticipated profits, or damages owing to any such changes.

Whenever it is considered more economical, the contractors may cause any work to be done by subletting same in sections, details or items to sub-contractors and station-men, and no work shall be done by the days work method that can be done by sub-contracting same, nor shall any part of the work be assigned, nor any part of the work sub-contracted to any person or sub-contractor not acceptable to the Chief Engineer.

All sub-contracts shall be made in accordance with such specifications and upon such forms and at such prices and to such persons as approved by the Chief Engineer, and all sub-contracts shall be executed in triplicate and delivered to the Chief Engineer, and upon approval he shall endorse his written consent thereon, keep one on file in his office and return the others to the contractors, and the contractors shall deliver one copy to the sub-contractor and keep one copy themselves. No sub-contractor shall be allowed payment for any work done on any portion of the work under this agreement until such above said sub-contract has been approved by the Chief Engineer.

No sub-contract shall under any circumstances relieve the contractors of their liabilities and obliga-

tions under their contract with the owners. Should any sub-contractor or station-men fail to perform the work undertaken by them, in a satisfactory manner, then the contractors shall immediately remove any such sub-contractor from the work upon written notice from the Chief Engineer that any sub-contractor's work is being unsatisfactorily done, or for any action of any sub-contractor or station-men that may be decided by the Chief Engineer as detrimental to the interests of the owners. Any agreement between the contractors and any sub-contractors of any station-men shall be deemed null and void, which in any way conflicts with this contract between the contractors and the owners for doing this work.

If at any time the owners should consider that the work is costing too much, or the Chief Engineer should be of the opinion and so certify to the owners, that the work or any part thereof is being unnecessarily delayed, or if the contractors are willfully violating the conditions of this contract or executing it in bad faith, or should they refuse or neglect to prosecute the work with sufficient labor or equipment to secure its completion within the time herein specified, then at the opinion of the owners this contract may be declared null and void, and upon giving the contractors forty-eight (48) hours notice in writing, then the owners may enter upon the premises and complete the work by any method they may elect, and the contractors shall cease to have any right in these premises and they shall receive no profit on any

work done or materials used or furnished after such nullification, but the contractors shall be entitled to the full amount due by virtue of all vouchers accepted by the Chief Engineer for all work done by him up to the time of such annulment, and the owners shall have the right to reject or retain and use any part of or the whole of any materials, tools, equipment, etc., and employ any and all persons engaged upon any part of the work at the time of such annulment, but the contractors shall, upon the completion of the whole work receive compensation as rental for any equipment owned by them and used upon the work at such prices as herein first agreed. Should the contractors abandon the work for any cause whatsoever, then they shall receive a profit of five percent (5%) only, on above said accepted vouchers. In the case the owners should for any cause elect to discontinue the work within four months after the date this contract comes effective, then the contractors shall receive full rent for the plant for the full period of four months.

The contractors shall furnish a complete steam shovel outfit, together with complete equipment for six station-men crews, including the following items:

1	Model 60 (2½) yard Marion	
	Steam Shovel	\$.....
2	14-ton Donkey Engines
18	4-yard Dump cars
20	1½ yard dump cars

3500 ft. of 35 and 40 lb. track and splice plates	-----
2 Switches complete	-----
2500 ft. of water pipe	-----
2000 ft. of 20 lb. track and splice plates	-----
1 steam pump and boiler or gas engine and pump	-----
13 head of horses with harness	-----
3 wagons	-----
6 slip scrapers	-----
6 Fresno scrapers	-----
2 Plows	-----
1 Water tank	-----
3 Wheel scrapers	-----
1 Complete blacksmith's outfit	-----
Complete camp equipment for 125 men, including tents, stoves, bedding, bunks, cooking and mess utensils, etc.	-----

together with any other items of equipment necessary to operate the above plant in an economical and effective manner, and the owners shall pay to the contractors the sum of fifteen hundred dollars (\$1500) per month as a rental for the use of above plant, and the owners shall receive said plant at Port Angeles, Washington, and load same on cars and pay freight therefrom to Idaville, Oregon, and upon the completion of the work, deliver said plant on the ground at Idaville, and the rental period shall be from the date of the bill of lading at Port Angeles, Washington,

until it is released by the owners and delivered at above said Idaville.

The contractors shall deliver the above said plant to the owners in good and first class state of repair, and subject same to the approval of the owners' Chief Engineer, and upon the owners releasing said plant back to the contractors, the plant shall be in the same state of repair as when received, wear and tear due to its having been used upon the work excepted.

Upon twenty-four (24) hours notice from the owners that the plant is no longer required upon the work, the contractors shall proceed with sufficient force and dispatch to immediately move said plant off the work and deliver it at Idaville ready for its releasal to the contractors.

The owners shall furnish "f. o. b. Idaville" all lumber, ties, nails, spikes, drift bolts, tracks, spikes, and bolts, fuel, lubricants, together with all small hand tools, such as shovels, picks, wheelbarrows, axes, saws, wedges, augers, drill steel, brush hooks and all other small hand tools except blacksmith and track laying tools, together with all powder, fuse and caps, and all materials going into temporary trestles and false work, and the contractors shall receive no profit on any of the above materials but the contractors shall receive on board cars or other conveyances, unload, cart and put in place or use all above materials, tools, etc., and be reimbursed for the cost of and receive a profit on any and all such unloading, carting, and putting in place as hereinafter stipulated.

The contractors shall give all their time and personal attention to the work or may (upon approval of the Chief Engineer) appoint one assistant, but neither the contractors nor said assistant shall receive any salary nor be reimbursed for traveling, incidental, personal or other expenses, neither shall they receive any reimbursement for office or overhead expenses, except those located on and directly connected with the work under this contract.

On or before the first of each month, the contractors shall furnish the Chief Engineer signed vouchers for all moneys spent by them on account of this work during the preceding month, and upon approval the Chief Engineer shall so certify thereon in writing, and upon such approval there shall be added a profit of five per cent (5%) to all such vouchers and the amount thus found shall on or before the 10th day of the following month be paid to the contractors by the owners, and the balance due by virtue of any further profit on said vouchers shall be retained by the owners until the completion and acceptance of the work and the final estimates have been made and within 30 days thereafter the owners shall pay to the contractors the balance due by virtue of the profits.

The contractors shall be reimbursed on all vouchers approved by the Chief Engineer and shall receive the face amount thereof.

Hereto attached is a sheet entitled "Approximate quantities," such quantities having been made up

from preliminary estimates and before accurate measurements could be made, and the final or pay quantities (in each and every item) may be more or less than these approximate quantities.

To each and every item shown upon said approximate quantity sheet there has been affixed an agreed unit price and from these unit prices and the final or pay quantities there shall be determined a BASE COST for the complete work as a whole; then should the final cost of the complete work amount to more than the base cost, the contractors shall pay 25% and the owners 75% of any increased cost above the base cost (provided that the contractors in any case shall not receive less than 5% profit on the base cost) and in the event that the whole work costs less than the base cost, then the contractors shall receive 25% and the owners shall receive 75% of any such saving, (provided that the contractors in any case shall not receive more than 15% profit on the base cost).

In the above mentioned final cost of the complete work, there shall be included every item of expense incident to the work, under this contract, including transportation of all men and equipment, rentals, cost of small tools, materials, fuels, lubricants, cookhouse and mess expense and repairs, together with profit received by the contractors and all other items of expense to the owners on account of the work covered by this contract, except the expense due to culverts, bulkheads and engineering.

Culverts and log bulkheads; the owners shall furnish all culvert pipe, and drift bolts, for log culverts and bulkheads, f. o. b. Idaville, and the contractors shall receive, unload, cart, put in place or construct all culverts, log culverts and bulkheads, and the owners shall pay to the contractors the cost of all such work plus a profit of 10% thereon, and such costs and profits shall not be included in the base cost of the whole work.

It is agreed that the rate to be paid for labor by the contractors shall not exceed the rates mentioned in the schedule of labor rates unless authorized in writing by the Chief Engineer.

If any class of labor not included in the above mentioned schedule shall be found necessary to the work, the contractors shall furnish same, and the rate to be paid shall be agreed upon by the Chief Engineer and the contractors in writing, and such agreement shall become a part of this contract.

If any equipment not included in the above mentioned plant shall be found necessary, the contractors shall furnish same and the rate of rental shall be agreed upon by the Chief Engineer, and the contractors, in writing, and such agreement shall become part of this agreement.

It is agreed that the owners may purchase, or rent, any equipment from any persons other than the contractors and the contractors shall use any such pur-

chased or rented equipment on the work and a rental for the use of any such equipment shall be charged against the work and shall be effective in the final base cost of the whole work and the rate of rental charges on any such equipment shall be agreed upon by the Chief Engineer and the contractors in writing, and the contractors shall receive no compensation whatever for using any such rented or purchased equipment.

Small hand tools not owned by the workmen and perishable equipment such as ropes, cables, picks, shovels, gaskets, drills and other small equipment shall be considered as a part of the actual cost to the work.

Such part of them as are in good and suitable condition at the completion of the work shall be taken back by the contractors at a fair price or at the option of the owners they may be taken by the owners or disposed of for the mutual benefit of the work.

AGREED UNIT PRICES AND PRELIMINARY ESTIMATE OF QUANTITIES:

	QUANTITIES	PRICES
Clearing	59.5 acres	\$180.00 per acre
Grubbing	17.84 acres	250.00 per acre
Common excavation, incl. 300 ft. haul,	146,600 cu yds.	.38 "cu.yd.
Solid rock excavation, incl. 300 ft. haul,	3,340 cu. yds.	1.55 " " "
Loose rock excavation, incl. 300 ft. haul,	1,300 cu. yds.	.70 " " "
Overhaul, per each 100 ft. hauled		
over 300 ft.	179,500 cu. yds.	.03 " " "

ROADBED:

The roadbed shall be 14' in width, excavation in solid rock shall be taken out one (1) foot below sub-

grade and back filled with earth or clay. Embankments made of common classification materials shall be fourteen (14) feet in width at sub-grade with side slopes of one and one-half ($1\frac{1}{2}$) horizontal to one (1) vertical.

Side ditches: In excavation on both sides of the roadbed and at the foot of the side slopes there shall be drainage ditches not less than one (1) foot in depth below sub-grade, with side slopes not less than one (1) horizontal to one (1) vertical, well cleaned out to allow for the free flow of water and insure good drainage to the cut.

Berm ditches: Where deemed necessary by the Engineer on either or both sides of any embankment for the purpose of sub-draining, the foundation of any embankment, there shall be ditches of such dimensions as determined by the Engineer. All berm-ditches shall be straight between the stakes, with side slopes smooth and said slopes not steeper than one (1) horizontal to one (1) vertical and well cleaned out to allow a free flow of water; no berm ditch will be allowed nearer than five (5) feet to the foot of any fill. All materials taken from any berm ditch shall be placed in the bottom of the fill and in no case shall it be wasted between the ditch and the right of way line. The Engineer may require berm ditches made before the embankment it is to drain is begun.

The Engineer may change any of the above dimensions, whether in excavation, embankments, or

ditches, should he consider that more efficient results be obtained by so doing, but in general the above dimensions shall hold.

CLASSIFICATION:

Materials shall be classified only as Solid Rock, Loose Rock and Common Excavation.

Solid rock shall include all rock in mass, or ledges in its original bed, or position, together with boulders in which the sum of its two girths, taken at right angle to one another, are equal to twenty-three (23) feet, and this shall be taken to equal one cubic yard. The above method shall be used as a distinguishing line between solid and loose rock only.

Loose Rock shall include slide rock, cement gravel, boulders and detached rock in which the sum of the two girths, taken at right angle to one another, are equal to two and one half ($2\frac{1}{2}$) feet and this measurement shall be taken to equal two (2) cubic feet. The above method shall be used as a distinguishing line between loose rock and common excavation only.

Cement gravel will be considered as rock ONLY when the aggregate or rock of which it is composed are cemented together "as near as can be determined" by chemical action of nature and then it shall be classified as solid rock, loose rock, or common excavation in accordance with its dimensions as above given for solid rock, loose rock and common excavation.

In no case will gravel be classified as rock which is stuck together by clay through pressure.

The Chief Engineer shall be umpire as to all classifications and his decision shall be final and binding to all parties to this contract.

Common Excavation shall include loam, clay, gravel, slide and loose rock and all other materials not included in the above classifications for solid and loose rock.

Free Haul: The above prices agreed upon for any of the classified materials shall include the hauling of any such materials a distance of three hundred (300) feet from the place of loading to the place of dumping and this shall be known as free haul.

Overhaul: For any of the above classified materials hauled a greater distance than the above mentioned three hundred (300) feet free haul, whether from a cut or borrow pit, an additional price per cubic yard for each one hundred (100) feet hauled after the first three hundred (300) feet free haul will be paid and shall be known as overhaul. The haul shall not be limited by any bridge or opening across or around which a reasonable load can be hauled.

The distance any material may be hauled shall be determined by dividing the unit price for common excavation by the unit price for overhaul and adding three hundred (300) feet thereto and said distance shall be the distance between the center of bulk of the cut and fill.

The distance any material has been hauled shall be determined by plotting and computing the distance between the center of bulk of the cut and fill and deducting three hundred (300) feet (free haul) therefrom, then for each one hundred (100) feet remaining shall be taken as one cubic yard of overhaul.

The distance any materials has been hauled shall be determined graphically by the Engineer on co-ordinate paper, and his determinations shall be final. The final overhaul quantities shall be denoted as a number of cubic yards hauled one hundred (100) feet and shall be paid for as such.

All excavated materials shall be measured and their quantities determined by averaging the end areas.

In no case will any material be paid for measured in embankments, but shall be paid for in excavation only.

Embankments shall be made from excavated materials, taken from the cuts, and embankments must be full width of the slope stakes at the bottom and fourteen (14) feet wide at finished grades with side slopes full and to a true slope and where there is a choice of material the best shall be used on top. The Engineer may require so much more material as may be needed to maintain the fills to profile grade shall be put on the side slopes and top of fills; this amount will be determined by the Engineer, being

allowed for shrinkage. No roots, stumps, logs, or vegetable matter shall be deposited in the embankments or fills, and in the case any equipment is used in hauling materials, necessitating temporary light trestles, the post sills and sway bracing may be left in, providing said posts and sills have a cross-section dimension not greater than eight (8) inches, and all sway and longitudinal bracing have a cross-section not greater than six (6) inches; and further provided that the tops of said posts and sway bracing shall not come within two (2) feet of the finished surface of the roadbed at sub-grade; also provided that all caps and stringers be pulled out at whatever depth below the surface of the roadbed may be; in no case shall caps and stringers be left in the embankments.

Culverts:

All culverts, whether concrete, vitrified tile or corrugated galvanized pipe, shall be laid to a straight line, where and as staked out by and as directed by the Engineer, on well packed earth or clay bed, with the earth or clay brought up around the sides at least eight (8) inches above the bottom of the pipe and well tamped before any fill materials are placed upon it.

In the case the ground where any culvert is to be placed is soft or boggy, then the soft or boggy ground must be removed to such a depth as the Engineer may deem necessary to insure a solid foundation and any such excavation shall be back filled with suitable material and well tamped to secure a solid founda-

tion for the pipe, that it may not sag and become low at the center from the weight of the fill over it.

Log Culverts: Where and in accordance with plans hereafter furnished by the Engineer there shall be constructed log culverts of such dimensions that the required size pipe can be slipped into them. All log culverts shall be made of suitable size, sound, peeled logs well made and drift bolted together and as directed by the Engineer.

Log Bulkheads: The face walls of all bulkheads shall have a batter of one (1) horizontal to six (6) vertical. All bulkheads shall be made of sound, suitable logs, and in no case shall any log be less than ten (10) inches in diameter at the small end. All face logs must have a length not less than two (2) spaces between the tie logs and as much longer as is possible to obtain them; the sill logs shall be large and securely bedded in their foundation to prevent settling; tie logs shall be notched or saddled and well fitted over the face logs supporting them, and to receive the next face log supported by them. Tie logs shall not be less than ten (10) feet long nor spaced more than twelve (12) feet apart with a crib log at least four (4) feet long supporting the face log between the tie logs. The tie logs must be staggered and not placed one directly over the other. Every fourth (4th) tier of tie logs must be drift bolted to the face log supporting it and secured to an anchor log with drift bolts at the inner ends. The outer ends of all tie and crib logs shall be sawn off at a distance of eight (8)

inches outside of the face of the bulkhead. If required, bulkheads shall be built, or brought up during the time the embankment it is to support, is being made. All logs going into bulkheads, must be peeled, well trimmed, sound Fir or Cedar.

Porous Tile: Should it be deemed necessary to put in porous tile at any place along the line of the roadbed, the owners shall furnish same f. o. b. Idaville, and the contractors receive, cart and put it in place, and payment therefore to the contractors as force account the same as for culverts. Tile must be laid to a true line, without sags or high places, through the entire length of the drain, and to such depth as required by the Engineer. On soft ground tile must be laid on 1 (X6) boards and care must be taken in backfilling that they do not lap one by the other transversely and that there is a clear unobstructed flow area equal to the diameter of tile throughout the entire length of the drain, and if required all joints must be wrapped with burlap to insure the above.

Finishing Grade:

Seven (7) feet from and on both sides of the center line of the roadbed and fifty (50) feet apart on curves and one hundred (100) feet apart on tangents, there shall be set finish stakes with tops kieleed or marked, and the finished roadbed shall be brought up to the top of said stakes and to a straight line between said tops throughout the length and breadth of the roadbed and the slopes of embankments must be full from

the tops of said stakes to the bottom of the slope stakes, and the finished surface of the roadbed must be left smooth and without bumps or depressions.

Waste:

No waste or spoil banks will be allowed above grade and no waste shall be deposited upon adjacent property owners' land, except through the written consent of such owners.

Clearing:

The surface of the ground must be cleared the entire width of the right of way between the stakes as set by the engineers on each side of the center line of the roadbed.

Clearing shall mean the felling of all standing trees and brush, bucking or cutting up into length and trimming the limbs off all felled or down trees, the piling of all bucked or other logs and the piling and burning or otherwise disposing of all limbs, tops, brush or any other perishable debris.

All logs deemed suitable by the Engineer for saw logs or for any use in the construction of the railroad shall be neatly piled on the right of way at such places that they will be entirely outside the excavation or embankment, and as the Engineer may direct.

Clearing shall include the falling and disposing of all trees or snags, either within or without the area of the right of way stakes, as the Engineer shall consider dangerous trees, and pointed out by him as such.

The progress of the clearing must be kept not less than three thousand (3000) feet ahead of the grading.

All brush must be cut off not more than ten (10) inches above the ground. In embankments, where the finished sub-grade comes within two (2) feet of the ground's surface, all stumps must be close cut to six (6) inches above said ground surface, and in any case no stumps shall be left standing whose tops are more than six (6) feet above the surface of the ground.

In no case shall any logs, tree tops, limbs, materials or debris of any nature be thrown or piled on any land adjacent to the right of way, except that a written and signed consent of such adjacent land owner may be obtained, to be used as a future protection to The Whitney Company.

Grubbing:

Grubbing shall mean removing from the ground to a distance of not less than two (2) feet below the finished roadbed, the piling and burning or otherwise disposing of all stumps, roots, embedded logs or other perishable materials not removed during the clearing within the area of the slope stakes and at other places as may be directed by the Engineer.

In no case will any excavated material be paid for in overbreaks, only the quantities within the area of

the cross-section stakes will be included in the final estimate of quantities.

Rate per hour. Rate per day. Rate per men.

Steam shovel engineer
 Steam shovel cranemen
 Steam shovel firemen
 Steam shovel watchmen
 Steam shovel pitmen
 Pump and water pipe line men
 Donkey engineers
 Brakemen
 Dump foremen
 Dump laborers
 Trestle Carpenters
 Trestle carpenter helpers
 Laborers
 Track laying foreman
 Track laying spikers
 Track laying laborers
 Water boy
 Cooks
 Cooks, second
 Waiters and dishwashers
 Locomotive engineers
 Locomotive firemen
 Blacksmiths
 Blacksmiths' helpers
 Powder man
 Powder man helper
 Teamsters
 Scraper and plow holders
 Stock tender
 Time keeper
 Time keeper assistants
 Storekeeper and material
 receiving man

Finally:

This contract is an agreement between the owners, the owners' Chief Engineer, and the contractors, to combine their forces, abilities and energy to prosecute the work in as economical way as is consistent with substantial construction, and it is understood that all work pertaining to the roadbed is to be constructed in a good and substantial manner and without unnecessary expense or delay.

AGREEMENT for the Construction of a Railroad Roadbed from Tillamook Bay to Kilches River, thence up Kilches River into Section 3, T. 1 N., R. 9 W., in Tillamook County, Oregon.

THIS AGREEMENT made and entered into this the 24th day of June, one thousand nine hundred and nineteen by and between The Whitney Company "Owners", a corporation authorized to do business within the State of Oregon, hereinafter called "Parties of the First Part" and Rajotte, Fobert and Winters, their heirs, executors, or assigns, of the City of Portland, County of Multnomah, State of Oregon, contractors, hereinafter called "Party of the Second Part."

NOW THEREFORE, in consequence of the covenants, agreements and payments to be made by the party of the first part, the party of the second part hereby covenants, agrees, undertakes and promises under a penalty hereinbefore expressed, to construct expeditiously, a railroad road bed, comprising about twelve and one-half miles of main line, sidings, wyes, and other track, from a point at Tillamook Bay on Kilches Point into Section 3, Township 1 North, Range 9 West, W. M., Tillamook County, Oregon, and deliver said road bed in fine state, ready for the track and ballast, bridges and trestles excepted, on or before the 1st day of January, 1920.

Provided, however, that the party of the first part shall upon the signing of these papers at once deliver

to the party of the second part, the right of way owned by the party of the first part for active construction work, in accordance with and as described in the foregoing stipulations and specifications, and as staked or laid out on the ground, and as directed by the Chief Engineer of the owners, acting as agent for the party of the first part.

And it is agreed that in consideration of the furnishing of materials, the complete and faithful performances and execution of the work of construction of said road bed, and the carrying out of this agreement and the specifications in accordance with their true spirit, intent and meaning, and by the date mentioned for completion of all work and to the full satisfaction of the party of the first part, then the said party of the first part agrees and does hereby bind itself to pay to the party of the second part the prices and in accordance with the stipulations as hereinbefore set forth, and in accordance with and in the quantities needed as hereinafter to be given and shown on the final estimate sheets as will be certified to by the Chief Engineer.

And it is further agreed that the party of the second part shall pay for all royalties or patent rights connected with or pertaining to any equipment used on the work, and the party of the second part agrees to furnish on demand or when necessary, certified evidence to the party of the first part that all such claims have been paid.

It is further agreed by all parties hereto that the attached agreements have been read and understood, and each and every paragraph and stipulation therein contained is agreed upon, and that they are hereby made part of this agreement.

IN WITNESS WHEREOF, the said parties hereto set their hands and seals this the 24th day of June, A. D. 1919.

Rajotte, Fobert and Winters (Seal)

Frank Rajotte (Seal)

Verne W. Winters (Seal)

Contractors, party of the second part.

Russell Hawkins (Seal)

President of The Whitney Company,
Party of the first part.

AS WITNESS HEREOF, I affix my hand and seal this the 24th day of June, A. D. 1919.

Wm. McKinlay,

Notary Public in and for the State of Oregon.

My commission expires August 1, 1921.

(Verified)

Filed June 15, 1923.

AND AFTERWARDS, to-wit, on or about the 17th day of October, 1923, pursuant to stipulation of the parties, plaintiff's reply to defendant's answer to plaintiff's original complaint was deemed to be a reply to defendant's first further and separate answer and defense to defendant's said amended answer.

(TITLE)

REPLY

Comes now the plaintiff and for reply to defendant's First Further and Separate Answer and Defense to plaintiff's First Cause of Action as set forth in its complaint herein, admits, denies and alleges as follows:

I.

Admits the allegations contained in paragraph I.

II.

Admits that prior to entering into said agreement plaintiff was furnished with a map and profile of said work and that said map and profile indicated the approximate alignment of said road bed as then contemplated, also the amount and character of work to be done in the construction of same, but denies each and all other allegations therein contained.

III.

Plaintiff admits the existence of said provisions

Q. When and where was this, and who were of said agreement as quoted in said paragraph III, but with respect thereto alleges that all estimates of the amount and character of work to be done in the construction of said road bed were after making due allowances for reasonable changes in the alignment, grades, forms and method of construction, based on an examination of the ground over which said road

bed was to be constructed, as shown by said original map and profile; and plaintiff further alleges in this connection that the additional work and labor, also difficult and expensive conditions under which plaintiff was required to perform same, were not and could not have been contemplated or anticipated when entering into said agreement.

IV.

Replying to paragraph IV plaintiff admits that prior to entering into said agreement, it made an examination of the ground over which said road bed was to be constructed as indicated by said map and profile, and after making due allowances for reasonable changes and deviations therefrom made estimates of the amount and character of work to be done, but denies each and all other allegations contained in said paragraph IV.

Further relying to said allegations in paragraph IV plaintiff alleges that the great amount of additional work it was required to perform in the construction of said road bed was due entirely to the manner in which said work was conducted and managed by defendant and not to any default or failure of plaintiff to perform said agreement.

V.

Admits as is alleged in paragraph V that the alignment and grades of said road bed were under defendant's instructions deviated from, but denies each and all other allegations therein contained.

VI.

Denies each and all of the allegations contained in paragraph VI and the whole thereof.

VII.

Replying to paragraph VII plaintiff admits that it was in a general way familiar with the climatic conditions in the vicinity where said road bed was to be constructed, but alleges that the weather conditions would not have added materialy to the cost and expense of said construction work, but for the fact that a considerable part of the work which plaintiff, when entering into said contract had planned to do during the dry weather, had to be done during the worst of the rainy season, all of which is more fully alleged and shown in plaintiff's complaint herein.

VIII.

Plaintiff admits as is alleged in paragraph VIII that it failed to complete said road bed on or before January 1, 1922, and that only approximately nine miles of said road bed was completed by plaintiff, and that on or about October, 1920, defendant assumed the full and complete management of said work, but denies, each and all other allegations contained in said paragraph VIII.

IX.

Denies each and all of the allegations contained in paragraph IX.

X.

Replying to paragraph X plaintiff admits that the provisions quoted therein are substantially the same as contained in said agreement.

XI.

Admits each and all of the allegations contained in paragraph XI save and except the allegation that plaintiff has been paid the full cost of all work done in connection with the construction of said culverts and bulk-heads, which is denied.

XII.

Admits each and all the allegations contained in paragraph XII.

XIII.

Admits each and all the allegations contained in paragraph XIII, save and except the allegation that plaintiff has been fully paid for all work and labor expended in lying said ballast on said road bed, which is denied.

XIV.

Admits each and all of the allegations contained in paragraph XIV, save and except the allegation that plaintiff has been paid in full for the laying of said track on said road bed, which is denied.

Further replying to said allegations contained in paragraph XIV plaintiff alleges that defendant is indebted to it in the sum of seven hundred ninety-three

and 45/100 dollars (\$793.45) for additonal work and labor incurred in unloading and reloading of ties and steel for said track, which said additional expense was incurred by reason of the fact that defendant, contrary to the usual practice in such cases, shipped all of said ties and steel to said work before said road bed had been graded, or before same had been sufficiently completed to proceed with the laying of said ties and track in the regular and usual manner.

XV.

Denies each and all of the allegations contained in paragraphs XV and XVI and the whole thereof.

Replying to defendant's second further and separate Answer and Defense to plaintiff's First Cause of Action, plaintiff admits, denies and alleges as follows:

I.

Admits the allegations contained in paragraphs I and II, but with respect to the allegations of paragraph II plaintiff alleges that said quoted provisions of said agreement do not permit of any arbitrary ruling on the part of said engineer, whereby plaintiff would be deprived of the amounts claimed in its complaint herein.

II.

Replying to paragraph III plaintiff denies each and all of the allegations therein contained and the whole thereof.

Replying to defendant's third further and separate Answer and Defense to plaintiff's First Cause of Action, plaintiff admits, denies and alleges as follows:

I.

Admits as is alleged in said third further and separate Answer and Defense, that between June, 1919, and October, 1920, monthly statements were rendered and settlements made between plaintiff and defendant on account thereof, but denies each and all other allegations therein contained, and in this connection alleges that defendant was at all of said times informed and advised by plaintiff that it would expect and demand full compensation for all of said additional work and labor performed in connection with the construction of said road bed; that at no time was there ever any agreement that said statements as rendered constituted an account stated between plaintiff and defendant, but on the contrary defendant repeatedly informed and advised plaintiff that it would be fully paid for said additional work.

For reply to defendant's fourth further and separate Answer and Defense to plaintiff's First Cause of Action as set forth in its complaint herein, admits, denies and alleges as follows:

I.

Admits each and all of the allegations contained in paragraphs I, II and III.

II.

Denies each and all of the allegations contained in paragraphs IV and V and the whole thereof.

WHEREFORE plaintiff having fully replied to the Answer of the defendant, demands judgment as in its complaint.

(Signed) DOBSON & KRIMS,
Attorneys for Plaintiff.

(Verified)

Filed July 17, 1923.

(TITLE)

Be it remembered that on the trial of this cause on the 24th day of October, 1923, the Hon. R. S. Bean presiding, both parties appeared by counsel, and the parties hereto having by stipulation waived their right to trial by jury the following proceedings were had:

(TITLE)

BE IT REMEMBERED that this suit came on to be heard before the Honorable Robert S. Bean, Judge of the above entitled court, on Wednesday, the 24th day of October, 1923, at the hour of 10:30 o'clock a. m. of said day; plaintiffs appeared by A. P. Dobson, their attorney, and defendants appeared by Mr. John M. Gearin and Mr. Edgar, their attorneys.

WHEREUPON the following proceedings were had:

FRANK RAJOTTE, a witness called on behalf of the plaintiff, being first duly sworn, testified as follows:

DIRECT EXAMINATION

Questions by Mr. Dobson:

Q. Mr. Rajotte, in what way are you connected with the Rajotte-Winters Company, the plaintiff in this case?

A. President of the corporation.

Q. And how long have you held that office?

A. About seven years.

Q. That is practically the life of the corporation?

A. Corporation, yes; co-partnership before that.

Q. Now, Mr. Rajotte, just generally what business was this corporation engaged in, or has it been engaged in since its organization?

A. Why railroad construction, highway and irrigation.

Q. During all the time, the seven years?

A. Well, yes, during all the time.

Q. Does this corporation operate in a small way or is its business of a large character—magnitude?

A. Why, we have always been up to three or four million dollars worth of work every year.

Q. That is you are not small operators, small contractors?

A. Medium—fair operators.

Q. Now, Mr. Rajotte, prior to becoming connected with this corporation, what business were you personally engaged in?

A. Contracting; railroad contracting.

Q. Same kind of work; same character of work?

A. Same line.

Q. For how long a time were you engaged in that?

A. Twenty-three years.

Q. How many years?

A. Twenty-three years.

Q. Are you an engineer, Mr. Rajotte?

A. No. I have worked at engineering but I am not an engineer.

Q. You are just what is known as a practical contractor?

A. That is it.

Q. Mr. Rajotte, when did you first meet or talk to any one connected with the defendant in this case, that is the Whitney Company, concerning this work?

A. I met Mr. Hawkins in 1917.

Q. What and where was this, and who were present?

A. I met him here in the city and he told me he intended to build a line down in Tillamook County.

Q. What did he say to you and what did he ask you to do if anything?

A. Well, he said it looked most likely they would build a line, and it wouldn't be a bad idea for me to drop down sometime, and see their engineer down there.

Q. Did you follow out his suggestion? Did you do this?

A. Why, he told me again in 1918—

Q. Just before you pass that point. Did you go down at Mr. Hawkins' suggestion?

A. I did in 1918.

Q. You didn't go down until 1918?

A. 1918 made the first trip.

Q. Go ahead; just go ahead and state what you did.

A. In 1918, why I talked to Mr. Hawkins again, and he said that they had an engineer on the job down there, and if I had the time I ought to go down and look it over.

Q. Just before you pass on, Mr. Rajotte, what was the idea of your going down and looking over it at this time? What was the reason for it?

A. Well, was an idea of building it and as to the cost of it.

Q. Did you and Mr. Hawkins have any discussion as to the cost of this road at the time, before you went down? Did he make any comments about it?

A. No, not before.

Q. Go ahead.

A. I went down about the middle of the summer of 1918, and met Mr. Cole at Tillamook.

Q. In passing Mr. Rajotte, just tell the court who Mr. Cole is.

A. Mr. Cole is the Chief Engineer of the railroad for the Whitney Company, and I went out over the different points where he intended to build the line.

Q. Did Mr. Cole go with you?

A. Mr. Cole went with me and showed me where

he intended the line, from a place called Idaville, running east up over Kilches River, Clear Creek and down into the timber.

Q. About how much distance did you cover?

A. About six miles, six and a half, seven miles.

Q. In substance just what conversation did you have with Mr. Cole at this time concerning this road and its construction?

A. Well, in 1918,—in 1918 I talked with Cole in regard to the kind of line he wanted; he wanted an ordinary inexpensive logging road, which he said would follow the contour of the hills up there, and hit the flat from Kilches to Idaville.

Q. Now, when you say hit the flat, just explain what you mean by that.

A. Construction on the lower end was less expensive than the upper, the way it looked.

Q. What was the character of the contour of the land as compared with the upper end?

A. Well, it was a flat; low flat country, and crossing the Kilches, you had a hillside from there up.

Q. When you say a hillside, was it a series of hills or ridges, or was it one hill?

A. It was a continuous not very large broken hill.

Q. Referring back, Mr. Rajotte, for a minute, this first part of the work you say was on the flats. What conversation did you and Mr. Cole have as to the grades to be put through there?

A. Well, we spoke about—he asked me what kind of equipment we carry, and I told him—this was

in 1918—I told him the kind of equipment we carried, and we looked over the bay, the work up to the crossing of the Southern Pacific and from there on up to where the grave-yard was and another three-quarters of a mile from there on again. We figured that was pretty much team and wheel barrow work and scraper work.

Q. To get this straighter: The first two or three miles of this work was practically flat; is that true?

A. It was light grade.

Q. That part of the work you want the court to understand was what is called light hand and team work?

A. Yes.

Q. Go ahead.

A. Or work that would run up to seven or eight or nine thousand dollars a mile.

Q. Was that the estimate of the entire work as a whole or just the first few miles?

A. The kind of a line we talked about at that time.

MR. FREED: Mr. Dobson, are you having the witness tell the court what Mr. Cole told him?

MR. DOBSON: Yes.

MR. FREED: We think the contract and these preliminary maps will best show that.

COURT: This is preliminary I suppose; will get to the contract later.

MR. DOBSON: The materiality of this may not show at this time, but it will later.

A. We went into details as to the line up, or

could the line be done from eighty to one hundred thousand dollars, in regard to operating and picking a suitable plan to put it through the cheapest way possible.

Q. I want to go back to the character of the work talked about on the line when you said you run through there. Just explain to the court what you had in mind about that.

A. The first two-and-a-half miles or three miles would run about three and four foot cuts and three and six foot fills and very light work, with the exception of two cuts, one we call the Grave-yard cut, and a small cut at Kilches River. Across that was a flat, before we hit the hills proper. From there on we figured to send a machine through there to get away from the rains in winter, to get that work going ahead; if not we couldn't get the work done in the time they wanted it done. That was the sole intention on these parts and we could get that work done no other way; if we didn't go in in the fall and send the machine through; we both agreed on that.

Q. Mr. Rajotte, aren't you referring to a later conversation? I want to get at this point so the court will understand preliminary to the main testimony, the work that you were considering as explained later by Mr. Cole.

A. Yes, but he took up the style of the machine that he wanted in 1918, and took up the different cast and reach of the steam shovel.

Q. The court don't understand what you mean by cast. I want you to explain to the court the dif-

ference in the operation of casting and other operations finally done. The court doesn't understand.

A. Why, there is a way of operating the shovels where you load no material whatever, and fix the contour to suit the machines and still get the uniform curvature suitable for a logging road, logging line; that is such a logging line as the Shay Engines and logging cars take—in other words, faster grades and slower grades and very heavy curvature, but the alignment can be so suited on this kind of hillside work there is very little overhaul, that is not much material to be loaded and hauled; very large cast and very cheap way of doing the work; the cheapest material we move. That is the idea we had of sending the engine up at that time—sending her in ahead with no equipment.

Q. Now, Mr. Rajotte, I don't want to spend much time on this but I want you to tell the court what the casting operation means, and what the hauling operation means in these hills with a steam shovel.

A. Your Honor, to cast with a machine, probably to carry a line would be about twelve men and your capacity is about—I would say the capacity of the machine would be in casting about three thousand yards, where in loading it would cut it down in this kind of cuts to say maybe four or five hundred yards, and the cost of operation with four or five hundred yards, and the cost of operation with four or five hundred would be about twelve to one maybe; where it would only run sixty to eighty dollars on a

cast job, it might take four or five hundred dollars on a loading proposition and dumping.

Q. The hauling proposition; what additional work besides?

A. Involved loading, putting up trestles for dumping; dumping and hauling the material and putting in track.

Q. Now Mr. Rajotte, subsequent to this visit with Mr. Cole over the line and this conversation, when did you next speak to any one connected with the defendant in this case concerning this work?

A. I talked with Mr. Hawkins when we came back from Tillamook about the building work.

Q. What was said in that conversation if anything that would have any bearing upon the controversy here?

A. He asked me what my idea was regards cost, and I told him, agreeing with Cole's idea, I thought he could get the line in there for about one hundred thousand dollars.

Q. What do you mean by agreeing with Cole's idea?

A. The kind of a logging road Cole wanted to build, and his way of operating it—that he wanted it.

Q. And that is all that was said at that time?

A. That is all that was said.

Q. Mr. Rajotte, coming to the meeting just prior to the making of this contract in controversy here in 1919, when did you talk to any one in the company, that is the Whitney Company?

A. I talked with Mr. Cole again and—

Q. When did you see Mr. Cole?

A. I went down in the early spring of 1919.

Q. And why did you have to go down there at this time?

A. Why Cole was in Portland, and he told me he had a little more profile for the work down there and he was acquiring some—he had acquired some property and that I could have a better look at the line-up at this time.

Q. Did you go over the work at this time with Mr. Cole?

A. No, I just went to the Kelsey River and looked at the Grave-yard cut.

Q. You went over part of it, didn't you?

A. Just back, and back to the bay again.

Q. Did Mr. Cole accompany you?

A. Yes, sir.

Q. Did Mr. Cole have any discussion at this time as to the character of the road bed that was contemplated?

A. Yes, sir.

Q. What was the conversation?

A. He had the same idea, just the ground work on the line, ordinary ground logging line, across the Southern Pacific tracks, and on about as far as Kilches, and he had the same ideas we both had of doing the work ahead, and setting the machine in across the Kilches River, and sending it in ahead to work both operations at the same time, scratch work, and work ahead.

Q. Did he state this at the time Mr. Rajotte, the

reason for doing the work in that manner?

A. Yes, sir.

Q. What was that?

A. If we were to be ahead in the winter, we couldn't accomplish anything, we couldn't get the work done in the time we wanted if we didn't place the machine up ahead there. It couldn't be done.

Q. Why couldn't it be done? Did you and Mr. Cole discuss that as to why it couldn't be done?

A. The river was coming up, the creeks and everything, and you can't accomplish.

Q. Would it affect the material in any way?

A. Oh, the material would be sticky, it would slacken you up.

Q. About what per cent?

A. Probably seventy-five or eighty per cent.

Q. Did you and Mr. Cole discuss the cost of this particular thing at this time?

A. Yes, we discussed the cost.

Q. What was said about the cost of this particular thing?

A. We had a talk regarding unit prices, that is, I talked unit prices with him. At that time he told me they intended to let a contract, and that he would like to see me have the contract, as I suited him on the line-up of doing the work, and I gave him approximately the unit—

MR. GEARIN: If the Court please, he is going very much afield on this conversation with Cole preliminary to execution of the contract.

COURT: I think should get to the contract.

Mr. Gearin: We are not bound by this, you understand.

Q. Now, following this visit to Mr. Cole down there, what did you do next?

A. I came back to Portland.

Q. And when did you next have an interview with the defendant, or its officials concerning the making of this contract?

A. Why, they put out requests for bids.

Q. Did you bid on the work?

A. No.

Q. What I want to get at, Mr. Rajotte, is the meeting you had with the defendants here or their officials, immediately prior to the making of this contract. Do you recall that meeting?

A. Yes.

Q. Who did you meet with?

A. I met Mr. Hawkins in the Lewis building in his office. He sent for me.

Q. Just what conversation took place with Mr. Hawkins at this time?

A. Why, he said—he asked me if we couldn't get together and fix up some kind of a contract to do this work, and I told him I thought we could. And we talked over different things about the contract, and Mr. Cole was there, and Mr. Hawkins told Mr. Cole for us to get together and fix up a contract, told Mr. Cole to fix up a contract.

Q. Did you do that?

A. Yes, our man Mr. Cook and Mr. Cole fixed the contract.

Q. Well, did you and Mr. Cole get together after this conversation with Mr. Hawkins, and determine—discuss and consider the terms of the contract that you were going to make?

A. We talked it over a little.

Q. Now, particularly, Mr. Rajotte, with respect to the unit prices referred to in this agreement, did you and Mr. Cole agree upon those?

A. We agreed on the unit prices, yes.

Q. Now, these unit prices as embodied in the contract, were they representing the actual cost?

A. Actual cost.

Q. Did they contemplate any profit to you?

A. No profit.

Q. Those prices—that was just the working basis?

A. Working basis.

Q. Now, Mr. Rajotte, before you entered into this contract, which was in June, some time in June—do you remember the date of the engineering contract?

A. Contract, June 24th.

Q. It is admitted June 24, 1919. Now, before this date, and at this time that you went over these contracts with Mr. Hawkins and Mr. Cole, did you have a profile?

A. Before that date did I have a profile?

Q. What I want to know is, when did you first see the complete profile of this work?

A. When I received the request for the bids.

Q. Did you at that time get a complete profile?

A. Yes.

Q. Was that the first occasion you ever saw a complete profile of the work?

A. Yes.

Q. And about what date was that?

A. That would be about, I would say, a week before the call for the bids. Would be about a month, maybe, before the letting.

Q. Before you entered into this contract?

A. I think so.

Q. That would be some time in May?

A. Would be some time ahead of that.

Q. At this time, Mr. Rajotte, I show you what purports to be profile of this road, and will ask you to state whether or not this is the profile that was handed to you, or given to you by the defendants?

A. Oh, that is the profile we had.

Q. You have examined it, you know what that is?

A. Yes, I know.

Q. And from whom did you receive it?

A. Mr. Cole.

Q. Where were you when you received this? On the work or some other place?

A. Portland Hotel.

Mr. Dobson: Have you any objections, Mr. Freed?

Mr. Freed: We have no objection if that jibes with the profile we offer. I presume it does.

COURT: Subject to correction.

MARKED "Plaintiff's Exhibit 1."

Q. Now, Mr. Rajotte, when you entered into this

contract had you examined this profile carefully, the one that is referred to as Plaintiff's Exhibit 1?

A. Yes, fairly so.

Q. And did you carefully check the various quantities shown, and the materials, different materials shown on that profile?

A. I looked the quantities over on the profile, yes, in regard to the time to get the work done.

Q. And did you note, as indicated on the profile, the various marks as indicated, the character and kind of work to be done?

A. Yes, sir.

Q. And in making your bid, did you consider this profile, and consider the information as disclosed by the profile?

A. Yes, sir.

Q. Did you also consider in conjunction with it the conversation you had with Mr. Cole?

A. Yes, sir.

Q. And then when you entered into this contract you did so in the light of the information you had obtained from the profile and examination of the work, and your talks with Mr. Cole. Is that correct?

A. I overlooked the profile very carefully, and looked over as to the way that Mr. Cole would allow me to get at that work, to get it done in the time.

Q. That is what I meant when I said you considered your conversation with Mr. Cole in conjunction with the information disclosed by the profile?

A. When I put in these prices, I figured that Mr. Cole agreed with my manner of doing the work, that

is, I had to agree with Mr. Cole or he didn't want me on the job. There was a machine going in ahead, and that was the main idea of the whole job.

Q. Now, Mr. Rajotte, you read profiles and understand profiles readily, don't you?

A. Fairly good.

Q. And you have built logging roads before you built this one?

A. Yes, sir.

Q. Have you built what is called standard roads?

A. Standard gauge roads, yes.

Q. Will you just state to the court generally the manner in particular these two road beds would differ in the manner of construction.

A. Logging roads and standard roads?

Q. Yes.

A. Well, in a logging road you would probably get sixteen or eighteen degree curve; on good standard roads like the S. P. and S., you get a three degrees. You have a very light grade, where in the logging road you get as high as eight per cent.

Q. Now, Mr. Rajotte, was there anything on this profile to indicate whether this was to be built as a standard road or as a logging road?

A. It was a logging road survey.

Q. How did you know that from the profile, Mr. Rajotte?

A. Well, looking at the curvature, and bridges, and different alignments.

Q. In other words, this profile referred to as Plaintiff's Exhibit 1, does that indicate the curves?

A. Yes, that indicates the curves.

Q. Did you note that at the time you were considering making this contract?

A. Yes.

Q. Did that indicate to you that it was merely a logging road?

A. Merely a logging road, following the contour of the land.

Q. Now, Mr. Rajotte, after you had made and entered into this contract, just what was done? What did you do?

A. Why, started the boys out on the job to line up a plant and get it going.

Q. Did you have anything to do, particularly, with that yourself?

A. Yes, sir.

Q. With whom did you confer following the making of this contract with reference to going on with the work?

A. With Mr. Cole.

Q. And did you and Mr. Cole discuss the manner in which you would proceed with it?

A. We did.

Q. Will you just state to the court in substance the conversation had with Mr. Cole?

Mr. Gearin: That is going too far. We must object to this going any further before the execution of the contract. Let's get at the contract.

Mr. Dobson: This was after; oh, I beg your pardon.

A. Mr. Cole—our main object, as I said before,

was to get the plant across the Kilches River up to Station 250, and get her started out there, with no rigging with it, just a bare plant, and he thought that was best, to put the machine in at Station 154, Graveyard Cut, and put the machine in there, and do six or seven thousand yards there on account of that being a thorough cut. By that time we would have plenty of time to get across the river. Not on a bridge, just across on a little cribbing. The river was low then, and get to Station 250, and that was the lineup for the work, except at the lower end we were to put in teams, wheelbarrows and picks and shovels, and start that in.

Q. You say in the first place your plan as to the steam shovel was Station 250?

A. First of all was 250, above Kilches River. That was the first plan. Then he wanted me back to 154 at the Grave-yard Cut.

Q. Did you and Mr. Cole finally agree that would be the starting point for the steam shovel?

A. 154 we agreed for the starting point.

Q. Mr. Rajotte, so the court will understand, about how many miles, or what is the distance from the beginning of the line to Station 154?

A. Station 154; well, we started at one hundred; that is 154 station, a mile two hundred feet from the S. P. track.

Q. Approximately how far would it be?

A. Well, from the beginning of the work was a Y. That would be one and a half miles.

Q. Was there any plan contemplated at that time

for using the steam shovel plant before Station 154?

A. No.

Q. Just go ahead and state a little further your conversation with Mr. Cole at this time with respect to getting the steam shovel plant further up on the work.

A. You mean on up ahead?

Q. Yes.

A. When we started?

Q. I am referring, Mr. Rajotte, to the time after you had made your contract and you were now working with Mr. Cole to carry out your plans for constructing this road bed.

A. Well, we loaded the plant and shipped it in there to Idaville. Arranged for to get to Station 154; Mr. Cole ordered the plant to Station 17.

Q. You don't understand my question. I want you to tell the court the reason, if any, given by Mr. Cole to you for getting your steam shovel plant up into this upper work. I refer to this particular time.

A. The reason was to beat the rainy season. We had to beat the rainy season to get the work ahead done, to go on up in there; that is the main thing. In order to hold the work down to cost, we had to get in there right away.

Q. Did you and Mr. Cole discuss the probable increased cost that would be encountered if you didn't go up there?

A. Yes, we did; knew that it would be—well, was unestimatable at the time, what it would cost in there in the winter.

Q. At this time was there any bridge across the Kilches River?

A. No, no bridge.

Q. How were you going to get across there?

A. The stream there is very little in the summer time. You can cross it any place with a little bit of blocking.

Q. The plan was to get across before the water came up?

A. The first plan was to cross there before the water—

Q. Mr. Rajotte, were you familiar with the changes, if any, Mr. Cole made in the plans after you and he had the conversation and agreed upon the way you were going to do this work?

A. Yes.

Mr. Freed: Conversation before or after?

Mr. Dobson: All this is after.

Q. Did you get the question, Mr. Rajotte?

COURT: After you entered into the contract?

A. Yes.

Q. And about when was it?

A. In August.

Q. And how long had you been upon the work?

A. I am not positive, maybe the latter end of July or August.

Q. Did you and Mr. Cole at this time discuss some change in the plans?

A. No, he changed the plans and I had no chance to discuss it with him.

Q. You had no conversation?

A. No.

Q. You had no discussion?

A. No.

Q. You just learned that he had instructed that the plans be changed; is that it?

A. When my party went in there to put the plant in this place, with the superintendent, I went away that week and came up in about ten or fifteen days, and I see the lineup was changed.

Q. You had no talks with Mr. Cole about it before that?

A. No, I had no talks. I left.

Q. Just what did you see there? When you came back at this time?

A. When I came back the machine was half way over from the side track to Station 17, moving back.

Q. Just refer to the profile, Mr. Rajotte, to get this thing straight.

A. The side track and the Southern Pacific lays alongside this line. The line is about half a mile away from it right here. The machine was going back this way, to this point.

Q. Just indicate what station?

A. Station 17. That is west of the Southern Pacific. Here is the Southern Pacific crossing right there. That is the logging line crosses this way. The side track at Idaville is here. Where we intended the machine was here, 154.

Q. What would be the distance to this point?

A. That is about a mile and a quarter, seventy-five hundred feet.

Q. So when you appeared there, Mr. Rajotte, at this time, to your surprise you found the steam shovel coming down this way?

A. Coming down this way. They had the complete outfit going there, complete shovel outfit moving to this point.

Q. Did you discuss the situation with Mr. Cole at the time?

A. Yes, as soon as I got off the train I met him.

Q. What did you say to Mr. Cole about this?

A. I said: "How come you changed these plans here going back?"

Q. What did he say?

A. I told him, "I don't see where the work was heavy enough back there." He had changed the ideas as to going ahead on the plan. He said he had changed his ideas on the other end.

Q. Did you remind Mr. Cole at this time as to the delays that you were going to encounter?

A. I told him.

Q. Getting in this work above?

A. Yes.

Q. And what it would mean as to carrying out your contract on the whole work?

A. I did.

Q. Did he make any response to that information?

A. He said that this machine would go back in there and if we wanted another machine and seen fit, we would put it ahead.

Q. Mr. Rajotte, what expense was incurred,—

about what expense would be involved in moving this steam shovel back to that point in the manner which was being done at this time, approximately?

A. Well, moved back there—you mean moved back and get up the trestle and get lined up for what we had to do, or just the bare moving?

Q. Moving back to this point and moving out again.

A. Getting it out again?

Q. Yes, you have to move it again. You couldn't leave it there.

A. Just how far you move it—back to this point, or where?

COURT: You said the machine was being moved back to 17, from some point to 17?

A. Yes.

Q. Be just a matter of moving from there to where being diverted on its regular route you say?

A. We had our line up to go ahead. That would cost us a couple of thousand dollars.

Q. That is approximately.

A. One way.

Q. What I want to get at, did you discuss that phase of it with Mr. Cole at that time?

A. Yes, in this way. There wasn't yardage enough there to move the machine back for.

Q. Was there any other work being carried on there in this vicinity that you hadn't heard of before, or hadn't contemplated when you entered into this contract?

A. Yes, Cole advised me that he had heavier

work back there than he contemplated. That is the reason that he took it back.

Q. Was there any particular character of work that he had down there that was not shown on the profile that you had not considered?

A. Yes. From the profile on the start was pick and shovel and team work, side borrow, and no overhaul. When the shovel came down there to finish it there was eighty thousand yards overhaul.

Q. Was that amount of overhaul shown on the profile?

A. None on the profile.

Q. No overhaul shown at all on the profile?

A. None on that piece of the profile.

Q. Was there any other work?

A. Yes, they had to do some grading for a combination machine shop and round-house and warehouse.

Q. Was that work indicated on this profile?

A. Not on this profile.

Q. Was it indicated on any profile?

A. On none I saw on the job at the time I took it.

Q. When did you first learn they were building this warehouse site?

A. When Mr. Cole sent the machine out to do it.

Q. You refer to the occasion you came back there and saw these things, you say?

A. When I came back, yes.

Q. What additional work besides the mere moving of the material for this warehouse site was

involved in that change?

A. We had to run extra material across the track, across the Southern Pacific. They raised their grades there some; across the warehouse site and some connections in there, and we put a small yard in there, small track there, and a few switches, hooked up.

Q. Was there any other work aside from moving the material for this warehouse site, to be done in connection with the building? Just State all you had to do, Mr. Rajotte, as you saw it there, to make this warehouse?

A. Well, we had to move back to Station 17, open up a borrow pit there, and run the material across. We had to take material close to two thousand feet, across the track, across the Southern Pacific track.

Q. To make that fill?

A. To make that road bed in there.

Q. Was there any preliminary work to be done getting the ground in shape over there?

A. Cross the track for a distance of a thousand feet; they ordered a sidetrack there. The grading—

Q. I am referring to something that didn't show on the profile, that you were not informed about. The profile shows the track.

A. No, this profile shows one track here. We graded out and cleared for an additional track in this thousand feet. It may not be a thousand feet long, it may be some shorter. It was a long track. Cleared and put the grade in shape.

Q. That necessitated clearing?

A. Clearing, grubbing and grading, and putting in shape. That wasn't on this profile.

Q. Did Mr. Cole inform you that was to be done, in any conversation you had prior to entering into the contract?

A. No, I had no information.

Q. Had you ever been shown a profile by any one?

A. Never; no profile of it.

Q. Now, Mr. Rajotte, after you had made this visit referred to here, were you upon this work at some time subsequent to that, when you noticed other changes which were being made, which were different and contrary to your original plans and understanding with Mr. Cole in which the work was to be carried on?

A. Yes.

Do you recall one of these occasions now?

A. Along in October.

Q. What was that?

A. Mr. Norris relieved Mr. Cobb.

Q. Who was Mr. Norris?

A. Mr. Norris then was chief engineer.

Q. Now, just tell the court what happened at that time, and what conversation you had, if any, with Mr. Norris?

A. Well, there was a letter come from the Whitney people at Portland saying that Mr. Cole's orders would go until such times as they conflicted; then Mr. Norris' orders would go. And at that time the

shovel was working up towards Kilchis River.

Q. Was that beyond Station 154?

A. That is beyond Station 154.

Q. And how far away was it, approximately?

A. A couple of miles.

Q. Now, you say you had some conversation with Mr. Norris soon after his being appointed there, after he relieved Mr. Cole, in connection with some change to be made in the plant and work up there. Just tell the court what that was, and where the conversation took place.

A. You mean with Mr. Norris?

A. Yes.

A. Mr. Norris—first, I had gone over the work a couple of times with him, and Mr. Norris wanted to send the plant back.

Q. Just tell the court what you mean by the plant?

A. Wanted to send the shovel back and open up a new pit opposite station—opposite Station 17 where we had the old pit and take more materials from there, and put it back on the fill, from the Southern Pacific crossing east.

Q. Referring to the station there, about what station was that?

A. Station 100 east—oh 120.

Q. 120 east?

A. 100 to 120, also put the material, more material from stations 1 to 15. Fifteen was the end of the borrow pit. The profile reads both ways here.

Q. The division line is the Southern Pacific

track, to make that clear, two divisions, one east and one west. Now, Mr. Norris wanted to move the steam shovel back to Station 17?

A. Yes.

Q. Where this old borrow pit had been opened up originally. That involved moving it about how far?

A. About a two mile move.

Q. How much time would that require?

A. Oh, again we got the track in there and everything, I guess we lost four or five days.

Q. Now, Mr. Rajotte, I want you to state to the court just the conversation you had with Mr. Norris about that move and the advisability of making that improvement or change at this time.

A. I told Mr. Norris that the shovel must go ahead on up the line if there was going to be any showing made, and he said regardless of the cost the lower end of the line that had been planned out by Cole had to be finished, and that the shovel must go back. And I had the superintendent, Mr. Calvin, and we talked with him that it would be better to take some material from where we were digging at the time, and put it back there, as that track was in good enough shape so as to take the materials ahead as we wanted them, and that is the only use we had for it. But he wanted to finish the work that Cole had laid out, as he told us, and then when we got across we would go.

Q. Mr. Rajotte, when you say he wanted to finish the work Mr. Cole had laid out—hadn't you fin-

ished that work, as you were instructed to finish it?

A. Yes, I had finished it according to this profile, and done extra.

Q. Well, did Mr. Cole supervise the work, or didn't he?

A. He did.

Q. Did he set the finishing stakes?

A. Stakes and everything. The track was done on it. We went back on standard gauge track to the second pit.

Q. In this conversation did you have any discussion with Mr. Norris as to the cost of this operation he was asking you to do at this time?

A. Yes.

Q. What was that?

A. I told him in my opinion there would be an extra cost right there in that couple of miles of fifteen thousand dollars.

Q. Was there any other discussion as to the feasibility of doing it at this time or some other time?

A. I tried to leave the track the way it is down there, and to take the machine ahead, but he would not let me off that piece to Kilchis River until he finished it the way he wanted it. He wanted everything cleaned up behind.

Q. Now, Mr. Rajotte, had Mr. Norris changed the grade there?

A. Yes, the grade had been changed there.

Q. About how much change did he make?

A. Well, he brought the line up at that time with the material we were dumping. We were dumping in

water to start with, as they didn't have proper drainage there. They didn't put the drainage in until after we got the railroad built, at that particular point, and we had to raise in water, so we probably went up two and a half feet or better above the grade line.

Q. Was anything said at this time, Mr. Rajotte, by Mr. Norris as to the necessity for doing that work, making this change, rather, at this particular time?

A. Well, I couldn't see any necessity for doing it, only Mr. Norris wished to clean up Cole's part, the work that had been opened up. It was detrimental to the work.

Q. Did you tell Mr. Norris?

A. I told him.

Q. It wasn't necessary to do it that time?

A. I told him it wasn't necessary, the superintendent with me, we all told him it wasn't necessary. I also had Mr. Hawkins get after me about it. He asked me why I done it. I told him I had to do it, as the Chief Engineer told me. He told me I should have wired him, and never mind that. But I was under orders of the Engineer.

Q. Did you make any effort to get in touch with Mr. Hawkins at this time?

A. No. They changed engineers, and was wrangling enough then, and then for me to go to the President, we couldn't have harmony there that way.

Q. Where was Mr. Hawkins at that time?

A. He was east, Detroit, I believe.

Q. Mr. Rajotte, was this all the conversation you had with Mr. Norris at this time?

A. I told him if he didn't get the plant ahead, the job was going to fail. That is, getting it done to that point. Mr. Cole had shot the thing back by moving back there, and he was doing more of the same stuff.

Q. In other words, this would involve further delay?

A. Still more delay.

Q. About how much delay did that involve, Mr. Rajotte, as a matter of fact, if you know?

A. Six weeks time. But that meant four months time ahead.

Q. Just explain why four months time ahead.

A. Was in fairly good weather, and we could have done better work ahead.

Q. You could have moved along faster?

A. Sure. January and February up there it rained awful heavy.

Q. Mr. Rajotte, was there any other changes that you know were made in the manner of carrying on this work, or in the preparing of the road bed?

A. The next change of the road bed, the line was moved here and there, particularly from Station 250 to Clear Creek.

Q. Just mention the stations?

A. 250 to 330.

Q. 250 to 330?

A. Yes, sir.

Q. And what changes were made there?

A. They reduced the curvature there; that is, they built a better line, straighter line.

Q. Did you have any talks with Mr. Norris about these changes?

A. Yes, I told him that it upset the work on us, it made all load and haul.

Q. Did you call his attention to the fact that it was a change in the character of the work from what you figured on?

A. I told him that the understanding with Cole, he was to let us go with the machine, and was to be a cast through there.

Mr. Freed: Mr. Dobson, is it alleged in your complaint, the change Mr. Rajotte speaks of?

Mr. Dobson: They are all alleged. I didn't limit myself to specific instances.

Mr. Freed: I would like to have you point it out.

Mr. Dobson: If that question is to be raised we just as well settle it now as any time. I didn't intend, and I don't think our complaint could be so construed as to limit myself to any specific instance of these changes. In other words, the complaint is drawn on the theory there were numerous changes made, and I undertook to set out some of them. There might be others come up at this time, and I think it would be admissible under the general broad allegations of the complaint.

COURT: Let the evidence in subject to objection. We will determine the materiality later.

Mr. Dobson: I think, at the close of the trial it will be easy to see this evidence is all material.

Mr. Freed: Save an exception.

COURT: Subject to objection and the determina-

tion of its materiality later.

Q. Where were you when you had this conversation with Mr. Norris? Was that on the work?

A. On this piece of ground right here, Station 280.

Q. What response did Mr. Norris make?

A. I can't say I was exactly on Station 280, but was within a few hundred feet of there, because was no stakes only every thousand feet or better when I was on the line, when I was there with Cole.

Q. What response, if any, did Mr. Norris make to you when you informed him of the fact that this work had been changed from a casting proposition to a hauling proposition?

A. Why, he said were going to straighten the line up, straighten Cole's line up. That is the way he said.

Q. What did he mean? What did you understand by that?

A. Well, now, the time Mr. Norris came there, he made a better line of everything. He made more of a main line of it, changed the curvature and the grade and bridges, etc.

Q. Now, Mr. Rajotte, the change that Mr. Norris was making generally there, did that add materially to the cost of building this line?

A. Yes, very much.

Q. In a general way, how much would you say?

A. You mean in the line as a whole, or in this one particular portion?

Q. No, taking into consideration the difficulty

that you would encounter because of these changes?

A. It would be over double the cost.

Q. Were there any other changes?

A. Up as far as we went, it was practically all change.

Q. What is the character of the work from this point you just referred to as Station 380 from there on up? What is the character of the ground up there?

A. It lays at different slope angles on up, with the exception of two large draws on there. That is Clear Creek and Sam Down's Creek.

Q. Mr. Rajotte, were there any bridges to be built up on that part of the work?

A. One at Kilchis River.

Q. Was that part of your work?

A. No, Shay Parker had that work.

Q. Did you ever have any discussion with Mr. Norris with respect to building these bridges?

A. Yes.

Q. What was that?

A. With Cole first, then with Norris, yes.

Q. I presume Mr. Norris was on the work at this time?

A. Yes, he was on the work.

Q. What was the gist of this conversation? What was the occasion of it? What occasioned the conversation?

A. The bridges were to be built and get out of the way for the machine to get across, built ahead of the grade. Bridges put in ahead of the grading.

Q. Were these bridges built on time? Were you delayed because the bridges were not built?

A. Yes, we were delayed on account of the bridges.

Q. Did you discuss that with Mr. Norris?

A. Yes.

Q. What did he say with reference to that?

A. Well, he done the best he could do for the chance he had, I guess.

Q. Mr. Rajotte, did you ever have any conversation with Mr. Hawkins concerning any of these matters which you discussed here with Mr. Norris?

A. Yes, we took them up once in awhile.

Q. Do you remember the first conversation you ever had with Mr. Hawkins?

A. On the works?

Q. On the works or anywhere else?

A. Well, had different conversations with Mr. Hawkins regarding the work. He always wanted the work—he told me at times, as we went up the line at different times, to get on more men and get it done.

Q. Do you remember any particular time when he was on the work with you, and you and he were discussing the method of carrying on the work?

A. Well, we discussed that every time. That was our business there at that time.

Q. Well, Mr. Rajotte, referring to this instance, is there any one instance that you have in mind now that something occurred which would throw some light on the difficulties here, have a bearing on the

way you were doing your work?

A. Why, Mr. Hawkins seemed to be—when we was going up over the line he would say to get it done, and when he came out and seen the manner it was handled, and on our way back would say going all right.

Q. Did he ever complain you didn't have sufficient work or was delaying the work?

A. Yes, he complained to me at one time; said we ought to have a larger force on up there. I told him we couldn't work the men to advantage on the work. It was impossible.

Q. Just state all that was said in that respect, what you did.

A. I told him if the management wasn't satisfactory to take the job, take it over.

Q. Do you remember about what time that was?

A. It was about my third trip up the line.

Q. How far had you advanced with the work at this time?

A. We were up about Clear Creek.

Q. That is about how far, how many miles?

A. Four or five miles.

Q. After you had discussed this matter of additional men with Mr. Hawkins, and he suggested putting them on there, was he satisfied with your explanation of the matter?

A. Yes, when he came back he said: "Frank, you are doing all right" because my experience told me at that time that any more hand labor up in there was just a waste of time and money. You couldn't

do nothing.

Q. Was that what Mr. Hawkins suggested, putting on more hand labor?

A. Putting on more force and get her ahead.

Q. Was that the only instance in which you had a conversation of that nature?

A. Oh, well, once in every six weeks—or two months, he would say: “Keep her going. Get her going. Get her done as quick as you can. Do the best you can.” He was always very good that way, and he always said to me: “Go ahead with it, Frank. Everything will be all right. You will come out all right, don’t forget that. Everything will be all right.”

Q. Did you explain, from time to time, the various difficulties you were encountering?

A. Yes, he knew that.

Q. Was there any discussion as to whether or not that would affect your compensation in any way?

A. No, not much, because I didn’t question that. I always thought at all times that as far as the compensation, that Mr. Hawkins would give us a good fair settlement.

Q. That isn’t the point, Mr. Rajotte. Did Mr. Hawkins tell you he would do that?

A. As to whether the line cost more or less?

Q. Yes, the fact it was costing more, was there any discussion?

A. No, was no discussion about percentage.

Q. Well, did he say anything to indicate?

A. Why, he noticed that the runover on the line

as to money cost more, and like of that, but that didn't bother him as regards me. He told me he would take care of me on that.

Q. Mr. Rajotte, about how many miles of this road was completed?

A. About nine miles. Nine. Might have been a little better with the Y in it at the lower end; I don't know.

Q. Now, at the conclusion of this work, did you know why you were taken off the work?

A. Why, Mr. Norris told me they were going to start logging in there, and they would do the rest of the work themselves.

Q. Who told you this?

A. Mr. Norris.

Q. When did he tell you that?

A. About a month before we got the order to pull in. He told me he wouldn't be surprised they would start in at any time, and they moved some of their camp equipment up in with our camp up there.

Q. That is, their camp equipment?

A. Yes, this logger construction camp. They were going to start logging operations.

Q. I show you a letter, Mr. Rajotte. Is this the letter you referred to, in which you were advised to discontinue the work up there?

A. This is the letter.

Letter offered in evidence, received without objection, and marked

"PLAINTIFF'S EXHIBIT 2."

Q. Now, Mr. Rajotte, referring to this letter, which is Plaintiff's Exhibit 2, which is dated September 25, 1920, I understood you to say that you had some talk with Mr. Norris about a month prior to that time, with respect to your discontinuing?

A. Yes.

Q. Is that correct?

A. That is correct.

Q. And the substance of that conversation was that they were going to proceed with the logging operations, and they would finish the work themselves.

A. As they went. They were going to take over all operations connected with their company.

Q. Now, Mr. Rajotte, did you have any conversation with Mr. Norris, or with any one connected with the company, between that time and the date of this letter, September 25, Plaintiff's Exhibit 2?

A. No.

Q. Concerning this matter?

A. No.

Q. Was this letter a surprise to you coming at this time, or were you expecting it?

A. No, it wasn't a surprise because I figured from there on to have a contract mixing in amongst logging camps is not good policy, and they know that.

Q. Now, Mr. Rajotte, at the time you had this conversation with Mr. Norris, preceding the receipt of this letter, and also at the time you received this letter, had there been any discussion as to further changes in the lines of this road bed?

A. There had.

Q. Yes.

A. Yes, they was still changing the line.

Q. Had the line been thoroughly fixed or established at that time if you know, or do you know?

A. No, he had part of it established ahead, and had it cleared for right of way.

Q. And about what station were you when this letter was received?

A. The shovel was up at Station 545.

Q. Where was the rest of your force?

A. End of the work for the clearing, I guess, would be—I couldn't say positively, but in the neighborhood of 570, up that way some place. I can't state that to a hundred or three or four hundred feet, but was up in there.

Q. Approximately.

A. I would say something like that 550 to 570.

Q. Now, Mr. Rajotte, after the receipt of this letter, I take it you moved off the work?

A. Pulled the line into Idaville immediately.

Q. Now, did you have any meeting or talks with Mr. Hawkins following that event?

A. Yes.

Q. How soon afterwards?

A. Oh, about thirty, forty, thirty days afterwards.

Q. Where did that take place? Here in the City of Portland, or somewhere else?

A. Lewis Building, Portland.

Q. What was the gist of your conversation? What was the conversation subsequent?

A. It was in regards to settlement.

Q. Well, will you state in substance what that was?

A. Well, we asked him for the balance due.

Recess until 2 P. M.

Portland, Oregon, Wednesday, October 24, 2 P. M.

FRANK RAJOTTE resumes the stand.

Mr. Dobson: At this time that is all, reserving the right to recall Mr. Rajotte.

CROSS EXAMINATION

Questions by Mr. Freed:

Mr. Rajotte, on what basis, or rather, relying on what matters, did you enter into this contract?

A. I didn't get that.

Q. Well, you stated you went over the ground,—I will ask you about that later,—with Mr. Cole. You said that a map and profile was submitted to you, and you had some conversation with Mr. Cole. Now, as I understand it, based on these things, you entered into the contract. What did you rely on?

A. I relied on the profile that Mr. Cole showed me.

Q. Well, did Mr. Cole—Mr. Cole showed you?

A. Mr. Cole.

Q. He gave you a map, he didn't show it to you. He gave it to you.

A. He gave me a map.

Q. That is the map that is in evidence there?

A. The profile in evidence, yes.

Q. Did he give you a map?

A. No map.

Q. Did he give you anything else other than that profile?

A. To the best of my knowledge, there was nothing but the profile.

Q. What did you mean, then, in this contract when you say a map and profile was submitted to you, and in your complaint, when you say a map and profile was submitted to you?

A. That is contract and profile, that contract and profile.

Q. If in your complaint and your testimony you say that a map and profile was submitted to you, what did you mean by a map? What map are you talking about? On page 2 of your Amended Complaint, at Line 5, Paragraph 4, you say that the "above mentioned map and profile of said proposed road bed" or to go back to the first time you mention that you say that "on or about the 25th day of June"—I think that should be the 24th, I think that was corrected?

A. Yes.

Q. (Continuing) "1919, plaintiff and defendant made and entered into an agreement in writing, wherein and whereby for the remuneration therein stated, plaintiff undertook and agreed to furnish all labor and perform the work necessary, or as may be required of it, to construct twelve and a half miles of railroad bed in accordance with a certain map and profile which had prior thereto been submitted to the plaintiff by defendant, from Tillamook Bay", etc. Where is that map?

A. If there is a map, profile and contract, you will find the contract signed by me, and the map initialed by me,—if there is one, but I had never seen any map when I took this contract.

Q. What did you mean?

A. Well, sometimes will call the profile the map, or the map the profile.

Q. But then that wouldn't be map and profile. You might have called it profile, or might have called it map, but you wouldn't call it map and profile, would you? I just want the facts. We contend, and will show you that we submitted that map.

A. Well, here is the way I look at it. If there was a map there, I initialed the map when I signed the contract, and I don't remember initialing any map. If you have it, all right.

Q. Did you initial that profile?

A. I think so.

Q. Well, did you initial the profile with the copy? This is our copy of the profile.

A. You must have the copy.

Q. Well, I mean if I have a copy, then you initialed it?

A. The profile?

Q. Yes.

A. Most likely.

Q. Now, Mr. Rajotte, here is what we are going to contend is the original, a blueprint of which we submitted to you, and that is the blueprint if I am not mistaken.

A. Very well.

Q. Now, would you have this initialed? I just want to get at your statement. You may have it, I don't know. I am not saying it is not.

A. I haven't got it initialed that I remember. All I remember is the old blueprint, but at the time of signing this, in order to put that contract through proper, they made you initial all papers that are presented.

Q. Initial the copy that you get?

A. All copies. To go through the form you have to do it. Now, if I had initialed it, I have signed it, but I never remember of seeing any map.

Q. Well, if we present a map here—

A. With my initials on it, all right.

Q. Suppose it hasn't got your initials on it, and it is testified to that it was submitted to you, would you be prepared to say no map was submitted?

Mr. Dobson: That is objected to. I think the map itself is the best evidence.

Q. I withdraw that question and ask you this: Are you prepared to say no map other than that pro-

file was submitted to you before signing that contract?

A. If you show me a map my memory will tell me by looking at it whether I have seen the map on this job or not.

Q. Please answer my question. Are you prepared to say now that none was submitted to you?

A. I am.

Q. You say that none was submitted to you?

A. To my knowledge now none was submitted.

Q. Now, Mr. Rajotte, you went over six miles of this road with Mr. Cole, you say?

A. Yes.

Q. How long did it take you to cover this six miles?

A. Took us a whole day.

Q. How did you go over it—walking?

A. No, we went up a side road in an automobile, and went across the river in a boat.

Q. Did you walk along the full six miles, along where the road bed would be?

A. No, part of it I seen from the machine, and went into different crossings like the lower end at the Graveyard, at Kilchis, and then came up the river the other way and crossed in a boat. I probably in looking at it walked four miles one way, and four miles back.

Q. I understand you to say you didn't go along the staked out area?

A. I went along the—I can give the stations I went along. I went along from about 260 on up to

about the six miles on the possible center line, where was a stake here and there, and a little bit of blazing done through the timber.

Q. You covered about four miles, then?

A. About four miles.

Q. You walked along about four miles?

A. Yes.

Q. How closely did you examine it?

A. Well, I was examining as to the lay of the hill, that is all. You couldn't make far, very slow going in there then, a part of the upper end of it awfully slow.

Q. How carefully did you examine?

A. I just examined as to the slope of the ground, and the material you could get away with that machine.

Q. Did you make any notes?

A. No, never put down any notes, only as to mileage, what I could do with the plant.

Q. Have you those notes with you here?

A. No.

Q. When is the last time you saw those notes?

A. If I remember—I never paid much attention to them notes.

Q. That is, you didn't pay any attention to those notes when you entered into the contract?

A. No, I had the lay of the ground in my mind when I went into it.

Q. In other words, in your mind and not in notes.

A. Sure. I was figuring plans for the job, the

easiest way to get away with the material, and I decided what I needed to do.

Q. You carried that in your head. How long did it take you to go over it?

A. I carried it in my head from that time?

Q. How long did it take you to go over that?

A. Make maybe two miles an hour in there, something like that. We were at leisure. Had a lunch with me.

Q. Took a whole day?

A. Yes.

Q. Throughout the day you carried everything in your head you needed to figure on this job?

A. Sure, yes.

Q. And that is what you went on?

A. Sure.

Q. And you and Mr. Cole agreed you ought to do it for about \$82,000?

A. Eighty to a hundred thousand.

Q. And Mr. Cole is the man you call incompetent in this complaint and yet you agreed with him. What would you say as to your ability?

A. My ability and Mr. Cole at that time, and the kind of line we were going to put in were correct.

Q. Did you trace the line?

A. The alignment?

Q. Yes, the alignment.

A. We didn't have so much to do; had the quantity of the grade and up and down. You must remember when we went we concluded it was an ordi-

nary, inexpensive logging line we were going to build.

Q. All right. We will come to that. This was staked out for about six miles?

A. Was staked out; had a stake every thousand feet or so, like ordinary logging.

Q. How could you tell how the road would run?

A. Experience tells me that.

Q. But maybe I would want a different line. Your experience couldn't tell where I wanted that road.

A. That is where I got the impression from, your road; from your engineer giving us leeway to make plans to follow the contour, to let the machine go to make headway, and get the work done toward winter.

Q. Did you have this profile when you went over the line?

A. We had a piece of the profile showing the ground.

Q. Did you have this?

A. Not the full profile; no, not the time I went up first.

Q. What were you going by? Going by what Mr. Cole told you?

A. I went by what Cole told me and my own judgment.

Q. Assuming that what Cole told you differed from the profile, what about that? Which would you go by?

A. How is that?

Q. Suppose that as Mr. Cole pointed out to you where this road bed was to be run, stakes a thousand feet a part—

A. Yes.

Q. Did it just point out to you "It runs right along there" or did you take this profile and trace it?

A. He had the profile, just showing the ground line, and as we were in the timber, you can see ahead of you some distance—might not be able to see over 250 feet. You walk over that ground and maybe down a little draw and up again. I looked at the different elevations there. I wanted to get a point to see whether a machine could go through there, to check myself. The creek is alongside me. I tell what kind of a grade there, what possible grade and the slope of the hill and then compare my machine and what to put. I have always decided on plant, that is all I ever do.

Q. When you signed this contract, did this contract describe the road bed you expected to build?

A. It did to a large extent.

Q. Then, if you built the road bed according to this contract, if that was the kind you were called upon to build, you have no complaint against the Whitney Company. Let me explain what I mean. If anything you gathered from your experience and observation was different from what this contract states, you understood the contract governed.

A. Yes, sir. I will explain that just the way you explain to me on that. When you hand me your yardage and figures on that contract—I will just

show you where I figure to bid on this work and set the time for January and I signed that contract, yes. You give me a logging line to build—understand here is where I get my information, if the plant is put up, regardless of anything from my own experience. You had 166,000 yards overhaul, which meant to do the job—you had a job entirely cast.

Q. You had that?

A. By the form you ask requests on.

Q. Where did you get these figures?

A. I got those figures from the request for bids, that is, the form, and in that contract read only a few yards; when we finished the job it was 680,000 yards—I wouldn't go to work and take eighteen four-yard cars to go in and do 680,000 feet of overhaul, 300% more, and tell you I could do that job in the winter. That would be wrong; you couldn't do it.

Q. Was the road bed built of the dimension called for in this contract? You don't answer the question. That is what I want.

A. It differed on that. It differed from that.

Q. What did you understand was meant by this statement. "The engineer assumes through this warning that the contractors have examined the ground over which the railroad is to be built and knew at the time he entered into this contract the amount of work to be done, the difficulties to be encountered, the hardness of the materials to be moved, handled and put in place, together with all other work to be done, and the quantities thereof, to bring the railroad to a fill and satisfactory completion by the

time herein set forth for its completion. The contractors accept this work solely and unreservedly upon their own information and without reference to any preliminary estimates of quantities, profiles or other papers handed to bidders before the contract for doing this work is let and the chief engineer reserves the right to alter and change the alignment, grades, forms and methods of construction as shown on the maps and profiles, and he may increase or decrease any and all approximate quantities as shown on the preliminary estimate and the contractors hereby waive all claim to any anticipated profits or damages owing to any such changes."

Did you mean what this contract said, did you understand that, did you mean to take your preliminary estimate and anything Mr. Cole said?

A. I made no preliminary estimate in quantity. Mr. Cole told me that and they were in that contract when I arranged to do the cost plus job.

Q. What did you understand this provision to mean?

A. I understand the provision to mean that I was a contractor, that Cole figured that he had a contractor that knew his business and that could check himself in looking at a piece of work. Now as to what I assume when you show me quantities and put that clause in there, you show me a different railroad than the one you built.

Q. How did it show a different railroad? Was the alignment changed?

A. Your alignment is changed.

Q. How much?

A. So much as to do away with the car and track haul and loading.

Q. Where was the alignment changed; what stations?

A. Well, the alignment was changed—

Q. Do you want to look at that profile?

A. Sure.

Q. Tell the Court just how much the alignment was changed?

A. Well, the alignment was changed above the Kilchis River, that is, the old Cole survey that I looked at was changed. This curvature in here from 12 to 16, or about down to about 10.

Q. What was moved?

A. The curve, yes.

Q. What did that have to do with the difficulty?

A. Well, you see, three feet from the bank, two feet from the bank, on the high side; that is 90% of the material; we can't cast.

Q. Could you carry in your head—do you mean to tell the Court you would carry in your head the alignment of that railroad for six miles? You didn't have this profile? You did get that?

A. We didn't have the profile but the alignment at that time had to go by a cast, and Cole understood would make it cast and cut down his overhaul in order to make the time.

Q. Who said it had to go on a cast job?

A. Cole, in order to get the time. We both agreed on it.

Q. Then you took what Cole told you then?

A. No, I took my own head with Cole's, that is right.

Q. How is it now, you come in here and want it different?

A. He didn't build the same line. He gave me 680,000 yards of overhaul against 166,000 on the profile. That meant loading a thousand cars and dumping fifty or sixty thousand loads of extra material. Your overrun in material is then sixty-two or three thousand yards.

Q. You understood, didn't you, any quantities appearing in the contract was just sort of an estimate?

A. Why, I had a price of three cents for overhaul, and a price for each unit of material. Still, I wouldn't want the Court to think I would go up there and sign up to deliver in a lot of cars and make thorough cuts at different places in that length of time. It couldn't be done. Had you built the line at the place and time we figured on all hunkydory.

Q. Who figured it?

A. The way the land lay and our alignment shows.

Q. That is before the contract was signed?

A. Sure; and this profile changed. That is, you built a different line than this profile.

Q. How much changed?

A. It is enough and took the management away from me, the engineers did. I had to go their way when they flashed the contract on me. I had to do

what they told me. That is stated in the contract.

Q. You understood when you signed the contract?

A. Sure; they took away the management from me.

Q. If the stakes were a thousand feet apart, how did you know where the old survey was? In other words, how did you know where Mr. Cole had the thing staked out, if the stakes were a thousand feet apart?

A. You mean the stakes intermittently between the thousand feet?

Q. You told me the stakes—

A. About a thousand feet, I would say. Might be more, might be less.

Q. How could you tell just where that alignment was to run?

A. Because the alignment was going to be put at the best grade you could put the machine through there, and you can't change it much.

Q. I am asking could you stand at thousand yard stakes—

A. See? You couldn't see in the timber at all—two hundred feet.

Q. You couldn't see where the alignment bank was to run that? Isn't that a fact?

A. Sure I could see. The river is down below me, the railroad should keep within a hundred feet—eighty—a hundred and sixty—eighty. Should keep some place in there, because there you can get level

grades. You ain't going to get a lot of extra money for nothing.

Q. I am asking if you could stand at each thousand yard stake and see the next thousand yard stake?

A. No; not in the timber, no.

Q. Then you couldn't do it. That is necessary, isn't it?

A. No, but could walk over and know what it was.

Q. Did you walk over?

A. Sure I walked over; I walked the center line.

Q. How many miles?

A. Four miles in there, pretty hard.

Q. You didn't walk over the other two miles?

A. The other mile was easy walking; that is where no clearing opened. You didn't have to walk centers.

Q. You took your own general estimate without putting down any figures?

A. Oh, sure, as to getting the work done.

Q. And you decided from that you could do this work by January 1st, 1920.

A. As regards figures now, the quantity figures were given me by the engineers, that I went on. You say my figures. I didn't make any figures. I figured time for getting the work done.

Q. What do you understand by this proposition that these preliminary figures don't govern?

A. That is all right, but we were signing up to do the railroad in a certain time; I had to look at quantities.

Q. Then you disregarded this provision of the contract? You didn't understand that that had any effect at all?

A. No, I didn't disregard that at all.

Q. You depended on the preliminary figures then, didn't you?

A. Why, sure, that is the preliminary for guides, your guides. Had you given me the finished quantity you wouldn't have had me on the work at all, or would have had me in there with two steam shovels.

Q. Do you know whether it is a fact, or is not a fact that these figures appearing in this contract, the amount of excavation and the amount of cut—the amount of cut and the amount of fill—are much less than the totals shown on that profile map? Do you know that was a fact or that it wasn't a fact?

A. Why, as a rule the work generally overbreaks some.

Q. No, you don't understand what I mean. On this profile map, it is shown at each place how much excavation there is to be and how much fill, that is shown there.

A. That is overhaul; I think the overhaul is on that map.

Q. Do you know this to be a fact, or is it not a fact, that if you add up the total excavation shown on that profile for the nine miles that your company did, that that will add up considerably more than the excavation called for in this contract as just a preliminary estimate?

A. I don't think it will differ very much.

Q. Suppose I prove to you that it does exceed it by a very great quantity, which did you go by, the profile or the quantity in here?

A. The quantity—when I signed this contract, you want to know which figures I used?

Q. Yes.

A. Well, I would say I would take the contract figures; on the contract.

Q. That is what is known as the preliminary estimate in here?

A. Yes, a few thousand yards, twenty thousand yards of material, don't make much difference.

Q. Suppose that the defendant shows you that you could have finished the road bed that was finished by excavating not one yard, cubic yard, more material than is called for on that profile, would you still say—that "Excavation" applies to fill and to overhaul and to all matters—Would you still say you have a claim against the Whitney Company?

A. Give me that question again.

Q. Suppose when we add up the figures on that profile which you had before you signed the contract, and it proves that you could have finished the same road bed that you actually built by excavating no more material than is called for to be excavated in that profile, that you made no greater fill or didn't have to make a greater fill than is called for in that profile, and the overhaul the same way, would you still say that you have a claim against the Whitney Company?

A. I used the Chief Engineer's method; I have to use their method.

Q. I don't want to get you confused, because I want an answer to the question, but I will state this: We expect to show by a witness that adding up the quantities of excavation and fill and overhaul as shown on that map—if it shows overhaul; I am not certain about that—is no less—the quantities shown which you should have known about are no less than the quantities which you could have dug out and put in in building this road bed. That is what I expect to show, that you could have built this road bed. What would you say about that?

A. If you can show me actual yardage, but I won't take any profile measurements, but I want actual material and balanced quantity, and your shrinkage and swell of material, etc., but not your profile.

Q. In other words, you don't care what that profile showed?

A. Yes, I do; yes, I do. Take an instance on the profile where we started out this morning.

Q. We will take the instance.

A. For instance, the first quarter mile, you over-run one thousand yards overhaul.

Q. How do you know that?

A. The profile has no overhaul on it; that is what I bank by.

Q. The profile doesn't show overhaul at all?

A. It shows ahead overhaul but don't show it back there.

Q. How about excavation?

A. Excavation?

Q. Have you added up the excavations shown on that first quarter of a mile of profile?

A. Yes.

Q. What does it add?

A. Shows it in three places.

Q. You did add up the profile? You used that profile in making the figures, didn't you—then I will leave this.

A. No, I didn't use your profile,

Q. You didn't use the profile?

A. No.

Q. Didn't pay much attention?

A. In other words, when you figure equipment to go in a job, winter job in this Coast climate, you figure car and equipment.

Q. When you signed the contract, Mr. Rajotte, you had walked over only about four miles of this railroad?

A. No, I had walked up to Sam Down's creek, and seen everything from the Bay to there.

Q. You had walked over before you signed the contract?

A. Oh, at intervals, practically all the line, maybe, but that is not so much in the center, you know, and light work. I didn't pay much attention to that.

Q. When did you do this?

A. 1918, 1919.

Q. You said this morning when you were up

there with Mr. Cole, you walked only over four miles of it; did you make another trip up there?

A. I went to the crossing and went up the river about a mile or so; crossed over the river; went up in that place, this piece I am telling you about, and then came down and took a look to where she broke over into the flat at Kilchis, then back to the crossing where we were, and walked through a ways, and come back and drove to another hole at the graveyard, looked both ways there and then to Idaville and looked there.

Q. That is the only trip you made?

A. Two trips.

Q. When was the second one?

A. In the spring of 1919.

Q. Were you with Mr. Cole both times?

A. Yes.

Q. The trip you spoke of this morning when you walked over four miles of it, was that the first or the second trip?

A. I think it was the first trip.

Q. You made a subsequent trip. Now, you expected them to build a road bed along a line of which you had a mental picture from the survey which you just recounted to the court. Is that right?

A. I expected, yes.

Q. Sir?

A. Build a line along—how is that?

Q. When you signed this contract, you signed a contract—you thought you were signing a contract

to build a road bed on a line of which you had merely a mental picture?

A. And had walked the bigger part of the ground.

Q. From the survey which you just recounted to the Court?

A. Sure.

Q. Now, Mr. Rajotte, when did you have a conversation with Mr. Hawkins? What date was that, approximately?

A. As to what?

Q. As to his statement that he would keep you whole, or something—I forget the expression?

A. Different times on the work. He said: "Go ahead, Frank. Everything will be all right"—that is the expression he used.

Q. Was that said in response to a statement from you, or did he just come out and say: "Go ahead, Frank. That will be all right"?

A. Well, he would say—no, he didn't come out and speak that way. Asked about how they were getting along.

Q. He did ask?

A. Yes, and couldn't we get on more force, and what our idea was up there, and maybe done a little kicking about the job, but when I came back down the line with him, he says, "I guess it is all right." I done my own crying—told him there was a lot of different changes in there, and I didn't see where there was going to be any profit in it for us, if it kept

up. He said: "Get it finished, Frank. You will be taken care of."

Q. Well, did you ever tell him you wouldn't continue that contract—you wouldn't continue your work unless a different arrangement as to payment was made?

A. No. I didn't tell him that.

Q. You never made any complaint, then, along that line?

A. The way I made complaint was had been so many changes and everything that unless he was going to see that we were going to come out all right, it would be useless for us to be there, as the chief engineer in both instances—we had to go by thier guidance, and we were not allowed to use our own way enough to carry it out.

Q. You understood the contract said the chief engineer was to be in charge?

A. Sure, I did.

Q. You knew that when you entered into the contract?

A. I did. I had let go the reins to him, and had to do as he told me.

Q. You don't contend, do you, or want the Court to understand, that Mr. Norris here, our engineer, for instance, or Mr. Cole, who was engineer at first, out of some whim, or out of cussedness, for instance, made these changes, or did it because we wanted you to lose money?

A. No.

Q. Then you don't claim anything like that?

A. Oh, nothing like that, no.

Q. You admit, don't you, that they made these changes because they thought it would give them a better road?

A. Sure, for the betterment of the line.

Q. Now, do you remember of ever telling Mr. Norris, and maybe Mr. Hawkins—I am not sure of that—that they were getting this work done as cheaply as any work on the coast, and if they didn't believe it, they should investigate, something of that import, maybe not those exact words?

A. I did, yes.

Q. Then they were getting that work done—in other words, the work was being done for them just about as cheaply as could be?

A. I think without experience we were operating cheaper than lines that were being built near the work.

Q. In other words, then, when they had you do more work, assuming that was the case, had you overhaul 50,000 yards, for instance, more than you thought you were going to have to, that 50,000 yards was overhauled for about as little cost as anybody could do it, wasn't it? That is what you meant to tell them, wasn't it?

A. We handled the material, whether it was overhaul or any other kind, about as cheap as any contractor, or a little cheaper.

Q. So any of these increases, if there were increases, and you seem to think there were at the present time, merely meant that instead of being \$50

worth of work there was \$100 worth of work. I mean that is the proposition, isn't it?

A. No, the increase in the overhaul and the alignment in there, taking that away from it and bettering your line, took our cast work away. In the first place where you spoiled that is where you took the machine at the lower end and put it in there, and put us out to the winter time, when labor in this kind of work is useless.

Q. I am glad you brought that out about moving the shovel. Did you mean to tell the Court this morning that you moved that shovel from Station 154 to Station 17?

A. No, moved from above that.

Q. From where?

A. From further up the line than that.

Q. I am speaking about the first move, the first time you ever hauled it back.

A. The first move was from the sidetrack at Idaville, over across the highway to Station 17.

Q. You said this morning, in exhibiting that map to the Court that you moved your shovel back?

A. Yes.

Q. How many times, in the course of this work here, did you move your shovel back?

A. In the first three miles we went back twice.

Q. Tell me the first time you went back, from what station you went, to what station you went?

A. We were on another track at Idaville, Southern Pacific railroad track. Here is the Southern Pacific railroad track, the logging line goes across

it this way. The depot is down about here, on a side-track. We moved it across this way.

Q. That was when you unloaded, was it?

A. Unloaded with the intention of going east.

Q. When you unloaded it, though—at the time you unloaded it, you knew you were going to 17?

A. No, we did not. We had no intention of going to 17.

Q. How far did you go in the other direction before you turned around?

A. We went to 17.

Q. That is what I say. I don't know what the intention was beforehand, but when you unloaded you knew you were going to 17?

A. No, we didn't know we were going to 17. Mr. Cole changed the orders. We were going to 154.

Q. How far had you gone to 154?

A. Hadn't gone any.

Q. That is what I say. The first move you made was in the direction of 17?

A. Correct.

Q. You didn't move up. I am afraid you gave the Court that impression. You didn't move towards 154 at that time and bring it back to 17, did you?

A. No.

Q. I understood you this morning—I don't say you said, or intended to, but my impression was that was what you meant. All right. You got to Station 17 with your shovel.

A. About that, yes.

Q. Now, what did you do. When did you make your—where did you move your shovel from there?

A. We stopped there and made a borrow pit.

Q. Where did you move to?

A. To 75 or 100 feet—the material. The shovel went to 17.

Q. You progressed, or started on up to 154?

A. We stayed in the borrow pit there and took material out to the Southern Pacific track and across the track.

Q. To Station what?

A. The tail of the haul was about where the highway crosses it.

Q. Just in a general way?

A. Well, the highway crossing, along the highway crossing.

Q. Is that about 125?

A. Yes, that is it, 125. No, 130, along in there. Now, wait a minute, we may not have hauled up that far, but we got in to 115, say.

Q. All right, I don't care about that.

A. I don't care about that.

Q. You progressed on up there. Then what did you do with the steam shovel?

A. Moved her then to—we took out—we cut there at—a small cut between 145 and 150, I guess—140 and 150 in there.

Q. Then you progressed on up to 154, was it?

A. Kept going, yes, sir.

Q. You didn't move back during this time?

A. No.

Q. How far did you go before you had to move your shovel back?

A. I think we were in the neighborhood of 228, something like that, 225. I am not positive about that.

Q. About what date was it? Can you refer to any record and show that—about what date was it when you started to move your shovel back?

A. I don't know whether—

Q. Approximately. I don't care about the date.

A. About November, I think.

Q. Some time in November, probably?

A. November or October.

Q. Now, you saw Mr. Norris then—he was the engineer at that time?

A. Yes.

Q. He told you to move that shovel back?

A. Correct.

Q. Back to where?

A. Back to 17, on the opposite side of the track.

Q. Back to 17?

A. About 17, in there—16.

Q. Why did you move it to 17? Why did he want you to do that?

A. Open up a new pit, to make more room for the sites at the track, and get more material to raise the fill again from the Southern Pacific crossing back to this 115.

Q. Then I understood you to say you moved it back to 17 this time?

A. Yes.

Q. From about 225 or 230?

A. Yes, something in there.

Q. Back to 17. And you didn't know anything about that until Mr. Norris came to you and told you to do it?

A. No.

Q. Were you on the job? Did he tell you?

A. I absolutely rejected taking that shovel back.

Q. Were you on the job? Did he come to you and say: "Mr. Rajotte—

A. No, he told the superintendent, I think, Glavin. Glavin just had the information, but I came down there.

Q. Had they already moved the shovel back when you got back from wherever you were?

A. No, I don't think they had. I won't say positively no; just this movement.

Q. How often were you down there on the job?

A. Not over three times in a month.

Q. Three times in one month?

A. Not over three times.

Q. What month?

A. Three times some months, two times one month, one time one month.

Q. Don't you keep a diary?

A. No, sir, I don't keep no diary. I have plenty of jobs to look after and keep going.

Q. You are not able to tell us, then, how many times you were down on the job?

A. To that work?

Q. Yes.

A. I should say in the fourteen months was down thirty odd times.

Q. I refer particularly to August, 1919. That was the first month you began?

A. Yes, August, I think I was there in August.

Q. You were not there in August?

A. I was there.

Q. How many times?

A. I think I was down twice. I can give you an instance, if you want to check it how you can tell.

Q. All right.

A. The shovel was about half way to the first pit when I got up there, whatever day that shows on the record of the move, I landed there that day. They made the move by a day or a day and a half, something like that.

Q. You moved that shovel back to 17, you say. How long did you keep it there. I don't want to tax your memory, if you have records.

A. We were a little over a month doing that work, that first time.

Q. And then you progressed ahead?

A. Yes, sir.

Q. Where did you move it to then? That is way up beyond 230, didn't you?

A. No, went on up to the cut this side of the graveyard.

Q. I don't know where that is, what station?

A. About 145. Well, she dug her way up there a ways—140.

Q. And when did you bring it back? You said you brought it back a second time.

A. Brought it back—if I could have the records I could tell—November, the first of December, some place in there.

Q. Do you know about what station you brought it back to?

A. Yes.

Q. What was it?

A. 17 on the opposite side.

Q. No, you brought it once.

A. Well, we brought it the second time back to that place.

Q. Second time?

A. Yes, 16 or 17. You see we had a borrow pit on each side. The first time we had left side borrow, looking towards the bay; the second time on the right hand side. The right hand side was a large borrow pit.

Q. Before you signed the contract, did you examine the ground beyond Sam Down's Creek?

A. There wasn't much examination there, no.

Q. How much was it?

A. Just what you could see through the timber there—that is all.

Q. Just standing and looking through?

A. Sure, that is all.

Q. You didn't examine it, then, did you, except that?

A. Just see the break—I knew the hills ran a little steeper there. I could tell, looking ahead.

Q. Had you ever been there in your life?

A. No, I had neevr been up there.

Q. Still, on that examination you based your estimates in going into the contract?

A. On that examination, and figures they gave me is what you base taking contracts for. That is all you know. That is the way we go over the work, highway work, or anywhere.

Q. Was the line of the road bed located on the ground above Sam Down's Creek?

A. I couldn't say, because I didn't go up in there to look at it.

Q. But what you could see, looking ahead.

A. I didn't see. I will say up there you probably couldn't see 75 feet ahead by looking through the timber.

Q. How did you know where that railroad was to run?

A. Well, you couldn't run it into the hill unless you put in a tunnel, and if you run the other way, would put a bridge in the river; had no other way to go but follow the contour.

Q. You couldn't see but 75 feet.

A. I knew he was going to put in the cheapest line he could put in there, from the information he gave me.

Q. You had a lot of experience contracting, and knew what people were going to do.

A. I didn't know so much. The engineer knew what was going to do.

Q. Did they do it? Was that the way it was actually run?

A. He could have run a cheaper line through that place.

Mr. Freed: I want to explain something here to your Honor. Maybe you have had experience in this, but when you speak of locating road bed, that means staked out on the ground. When a thing is located, you have your map of it.

Q. Now, may I ask this question: Did the Whitney Company's engineer locate that railroad, or that road bed according to the way you thought it was going to run beyond Sam Down's Creek?

A. You want to know on the line they built this line?

Q. I want to know as they actually had you build, whether that alignment was the alignment which you pictured in your mind when you stood up there gazing off into a place you couldn't see 75 feet ahead of you?

A. Cole had been up in there, you understand, and told me what he found, understand, and I looked ahead at it, and we were to go through there the cheapest possible way with the machine. The grade didn't bother us.

Q. In other words, you were going to build through your contract, signed your contract, rather, on a basis that you looked off up there and couldn't see but 75 feet, and that is five miles up there, but you knew because Mr. Cole told you they wanted it done as cheaply as possible, and you know what kind

of a road that was to be by having it done as cheaply as possible?

A. Yes, and had a survey of about ten or twelve thousand yards per mile.

Q. That survey is that profile?

A. Not at that time he didn't have this survey.

Q. In other words, at the time you entered into the contract he did not.

A. He didn't figure on the line you built there at the time we went in there, and he had no intention to put in that line there.

Q. You make that statement, but I want to know how you know that?

A. Because I agreed with him on the figures we could do the work for, about \$100,000, and we know what we can do the work for.

Q. You say in your complaint, and swear to it, and say in this contract you signed that you examined it?

A. I have examined it, giving me information enough to bid on it.

Q. You say that in making your estimate, based on your examination, you allowed for changes which would be made. Now, what examination were you talking about?

A. But not such radical changes as you have, building a different line.

Q. How did you know what kind of a line?

A. Experience tells me, and Cole told me the kind of line they were going to build. When he figured to build a line up there for \$100,000 he never

figured to build the line you built; you built a trans-continental line up there. You didn't build a logging line.

Q. In other words, you entered into this contract on the basis of Cole and experience; that is a fact, isn't it?

A. Yes.

Q. In spite of the clause in the contract. Who is Mr. Glavin?

A. He is a superintendent I have.

Q. He is your superintendent?

A. Yes.

Q. He was in charge of your work?

A. He was in charge with Mr. Fobert on the work.

Q. How often was Mr. Fobert down there?

A. Fobert went down first to start them off, as I left, and started them off and came away. He didn't go back for quite a little time. Mr. Glavin took charge.

Q. How long was Mr. Fobert there the first time?

A. The first time. He looked over, he started the outfit; there about a week.

Q. A week?

A. I imagine about a week.

Q. How long was he away subsequent to the week he was there?

A. Then Mr. Glavin took hold, and I don't think Alec came back for—I don't think Alec came in un-

til spring again there. He might have went down there once or twice to take a look.

Q. He didn't have anything to do with the management?

A. Yes, he did.

Q. Not on the job. You say he was not there.

A. He went down there with the same orders that I had. If there was any place we could trim it, he would give orders to the superintendent what to do.

Q. When was he there?

A. I am not positive. I imagine a few days in the first four or five months; then he went down and stayed there.

Q. In the spring of 1920?

A. Yes, he went there and stayed there.

Q. Who was in charge of this work?

A. Glavin in the meantime was superintendent under my orders.

Q. Glavin was in charge, as far as you were concerned, locally there?

A. Sure.

Q. Who is Mr. Rackcliffe?

A. He is the timekeeper.

Q. He was what?

A. Timekeeper and bookkeeper there for the first month or six weeks or five weeks.

Q. Now, Mr. Rajotte, how did you expect to make your fills if you were going to dump this excavation over and throw it away? Where were you going to get your dirt to make your fills?

A. Well, you show me the fills on here that you want, and I will tell you.

Q. Wherever you dump.

Q. Show me the fills, and I will tell you how I expected to make any one of them.

Q. Where did you do your first dumping? Where did you intend to do your first dumping?

A. Well, the lineup in the first place was to go across Kilchis with the machine. They said put her in for a short time at Station 154.

Q. You don't answer my question. You told the Court that you expected, when you signed this contract, in many places to be able to take the material you excavated, and just throw it away, dump it, in other words, didn't you?

Mr. Dobson: May I make a suggestion? If you will let Mr. Rajotte take a pencil, he will try to diagram.

Q. I know, but you told the court when you entered into this contract, you thought that in many places you were going to be able to dump the excavated material, and you now tell us you had to haul it out. Wasn't that what you said?

A. That is correct. We were going to dump some of it into the fills, and some of it into the waste.

Q. Where were you going to dump the material? What place? Then I will take up the place.

A. What is called the cast job, starts about 255, then go on up the line.

Q. In other words, before you got to Station 255, you never expected to dump any material.

A. No, we didn't look for any cast.

Q. All right, I will take Station 255 anyway.

A. No, no. The lower work was not cast work, but it was team work, wheelbarrow work.

Q. Mr. Rajotte, will you look and see if that profile is initialed. You say you always initialed your maps and profiles.

A. Well, it is customary, because the contract isn't supposed—

Q. Did you follow your custom in that case?

A. I am not positive.

Q. You have got it in your hand, you can see.

A. I know, but it has been through the work. If it is on here—I will look it over. If I see my own "F. R." on it, I could tell you. Probably all wore out. This has been over the work. I don't see any.

Q. Then if we produce a map that we say was like one submitted to you, and it hasn't your initials on it, that doesn't necessarily mean it was not submitted to you, does it?

A. No, not necessarily so. No, no. In fact, I might have looked at this map, as I say, but I don't see how I could have looked at the map and ordered the machine to the front. That is where I am questioning.

Q. When we show you the map, it may recall it to you. I am not trying to catch you or anything. What I asked you was, if we show you a map, and it hasn't your initials on it, simply because it has not your initials, you will not say the map was not, or a like map was not presented to you?

A. Well, I wouldn't say it wasn't presented to me, no.

Q. What?

A. I wouldn't say it wasn't presented to me. I might have seen it.

Q. I mean on account of the initials, simply because your initials don't appear on it—they may appear for all I know, but simply because they don't appear on the map, you don't mean to tell the Court the map wasn't submitted to you?

A. If my initials are not on this map?

Q. Does that mean the map was not submitted to you?

A. Not positively, no. I might have seen the map. No, no, because there is always maps to these jobs. Generally where there is a profile, there is a map, sure.

Q. And there is no reason to think—

A. No reason to think whatsoever.

Q. No reason to think this was any different from any other case?

A. No, no reason to think anything any different.

Q. You spoke this morning of having to go back—I believe I am right—having to go back and against your will at Mr. Norris' orders, and complete the road bed, or regrade, whatever you want to call it, between Station 107 and 122. I believe I am right there. That is, in a general way.

A. From the Southern Pacific crossing, Station 100 and from 1 to 16.

Q. I am just speaking now of 107 to 122?

A. Yes.

Q. You told the Court this morning that you had completed that road bed to the satisfaction of Mr. Cole, who was the defendant's chief engineer when you first went over there, but that Mr. Norris, our engineer at that time—this gentleman—required you to go back and change something. Am I stating your testimony in general?

A. That is correct; change is right. That is to grades and alignments.

Q. Do you at this time mean to say that road bed was really completed between 107 and 122 when Mr. Norris made you go back, if he did make you, as you said this morning?

A. There was a suitable quantity there for the road bed, and the profile that you have here laid out.

Q. Sir?

A. There was suitable quantity put in according to the road bed on this profile.

Q. I thought you didn't go by the profile?

A. You have to go by the profile. You can't go by anything else, as to alignment or as to grades. We are talking about before, but after you start in, the engineer gives you the level to go on. The contract has nothing to do with that.

Q. Then the road bed between 107 and 122—we may have it a station one way or the other.

A. Call it 100 to 122.

Q. 100 to 122?

A. Yes.

Q. Was completed as that profile there called for?

A. Yes.

Q. At the time Mr. Norris, you say, required you to go back?

A. As to the grade that was wanted in there by Mr. Cole, yes.

Q. How do you know that, Mr. Rajotte?

A. Because the grade stakes were run across it at the time.

Q. Did you see it?

A. Sure.

Q. Did you make a note of it?

A. I didn't make a note. Why would we leave there?

Q. So it is a conclusion?

A. The track was down on it. We crossed over the main line track. If suitable to put an 80-ton machine over, it is surely good for a logging line.

Q. Was that the permanent track?

A. Yes.

Q. Suppose it develops, and we ever convince you that no track was on the road bed between 100 and 122, when you went back there, what would you say?

A. You can't convince me. You can't convince me on that, because we had already done it.

Q. I withdraw my inference there.

A. That is an impossible thing.

Q. Yes, your track was there.

A. It was finished and called good.

Q. Your track was there—I was mistaken about that.

A. That is why I can't understand how your yard plans come in for more material when we didn't know anything about it, or put it in at the time.

Q. You had completed this road bed, and the track was down there?

A. Yes, sure the track was.

Q. How much done?

A. Dressed it, and laid the track, and tore out three foot track, that is, the first three foot track, tore that out and made standard track.

Q. What did you go back for?

A. To raise the grade. We went back and raised the grade on account of high water.

Q. Didn't you have to raise the rail?

A. Sure; that is what made it so expensive.

Q. How much did you raise that?

A. Raised it about three feet. Here is the point I want to give you. The track that was raised three or four feet at that time today is probably down three feet. We were under water there. There was no drainage in that fill, they didn't put drainage in that fill until after the railroad got there, and put pipes in the lower end. It couldn't stand up. They were digging alongside some kind of work in the highway.

Q. Whose duty was it to put the drainage in ?

A. The engineers.

Q. In other words, the Whitney Company's duty to put the drainage in?

A. They locate all drainage.

Q. Where do you get their duty from?

A. Duty? From the duty of the chief engineer, or his assistant, in any railroad, any western railroad.

Q. But, if it was for the Whitney Company, or the Whitney Company's chief engineer to build that grade, you were employed to do that?

A. Yes, under his direction.

Q. I am asking you whose duty was it to prepare that drainage, or ditches, or what not?

A. To prepare it?

Q. To drain it. I don't care what you call it. You say the drainage system was not in. Whose duty was it to put it in?

A. The engineer's duty to order it in, and have it in there at the start.

Q. He had to order you to do it?

A. Sure he did. We can't do them things.

Q. You couldn't do any work unless he ordered you to do it?

A. No, I couldn't go and put a pipe in his grade in there, or I couldn't put a pipe on the Southern Pacific.

Q. If you knew that drainage was necessary there, unless Mr. Norris told you to go ahead and put that drainage in, you could stand back and not do it.

A. Why, if the profile shows drainage in there and they provide the pipe and have it there, we put it in. I can't order a pipe in the grade at any place.

Q. Suppose this track specifies dimension and everything of the ditches of all kinds?

A. Yes, which it does.

Q. Do you concede you could sit back until Mr. Norris came to you and said: "Look at that water. Put in your drainage system."

A. Sure, he had to order that in.

Q. You didn't have to build any road bed. He had to come to you and order you to build the road bed?

A. How is that?

Q. You couldn't go ahead and build the road bed until he came and ordered you to build it?

A. No, where working on the road bed or anything like that; we could leave an opening in the track to provide for this water, something like that, but in this case the thing was built, the water came up, and the drainage was put in afterwards.

Q. What kind of a drainage did you need there?

A. Concrete pipes, pipes of some kind.

Q. Would that be culverts?

A. Culverts, and the like of that.

Q. Did you see anything in the contract you were to build culverts?

A. I was to build culverts on force account.

Q. Yes.

A. Sure, but I have to have orders for that. I can't build a pipe, and the engineer come along the next day and say take that pipe out there. "Who is going to pay the labor for anything I don't order?"

Q. Could you tell one of your men to take up

some dirt from this spot, if Mr. Norris had not ordered you to do it?

A. No, I am not confined down like that at all. Mr. Norris told me, "You go get that 5,000 yards out, as quick as you can, and put in the fill." And I put in the fill. And he comes back and says, "Why don't you put in a pipe?" And I says, "The plans don't call for a pipe."

Q. The contract says you are to put in all culverts.

A. Sure, that contract don't say I do the engineering, does it?

Q. No.

A. Then I couldn't have anything to do with the pipe.

Q. It says you shall put in the culverts?

A. Sure it does.

Q. Look at that point and see what the profile specifications are?

A. Nothing.

Q. What stations is that?

A. 101. That is the lowest spot; shows drainage pit of the Southern Pacific there. That is where the pipes ought to went.

Q. Maybe yours is not like mine.

A. There is the crossing. See that little notch. That is the old borrow pit the Southern Pacific built. That is the lowest place. This is where the fill is.

Q. What does that say up at the top of this. Read that? ?

A. That is what I mean. It says, "Pipe" there in two places, three places.

Q. Yes.

A. Yes, but the pipe is too high up there to take care of the grade.

Q. I thought you said that didn't show any culvert?

A. It doesn't show culvert in the proper place to drain the fill. Had the fill been drained right, the railroad would have been running fine, and we wouldn't have went back on it. You can't hold water on light fill.

Q. How far out of plumb is that?

A. I won't say out of plumb. Plenty of water where they were, but should have been more drainage and lower spot; where, for instance, put their pipes, don't sink in natural ground—keep them out.

Q. Did you ever object the drainage was not proper?

A. I have no objection to drainage, no. We were through in good weather, and got across there all fine.

Q. At that time did you object they didn't have proper drainage there?

A. No.

Q. Did the Whitney Company have anything to do with the weather?

A. No, nothing at all.

Q. Were you familiar with the seasons down there?

A. Sure; wet.

Q. You knew when was wet and when not, down there?

A. A rotten place, like.

Q. You knew about it when you went in there, when you contracted?

A. I knew about it; that was what I was afraid of all the time, in the contract.

Q. In December pretty wet down there?

A. Quite wet.

Q. The last of November pretty wet?

A. Yes, and had an awful wet spring up there.

Q. Likely to have that?

A. You bet.

Q. You knew you would be working wet country?

A. Yes.

Q. And you knew that overflowed there sometimes?

A. I didn't know it overflowed.

Q. If you had examined the ground you would have known it.

A. If I had levels of the ground, or took particular notice—in other words, the way to find this is not at the spot where the water is, but go back to the basin where the water starts, and see from the contour of the country where the water comes in, but I never looked for that much water.

Q. In other words, you didn't look for that much water?

A. No, I thought he had land in there, and was bad land.

Q. If you had examined it like you say you did in your complaint, made a careful examination of the territory over which this road bed was to run, you would have known that?

A. Why, no, I wouldn't have known it. I wouldn't have known that.

Q. Then the careful examination made by Mr. Cole or Mr. Norris of the Whitney Company would not have shown it either, would it?

A. No, it wouldn't show it.

Q. Then that was unexpected element, wasn't it?

A. It was, but it wasn't necessary to go back at that time and raise the grade. We had only the material to go over there to the front.

Q. Would water be over the track?

A. Lightly over it.

Q. Could you go on and use the track just as well?

A. Yes, could go over it. We were going over it, going to and fro every day.

Q. Was it very safe to go over that?

A. Was good enough for the ton locomotive we had. We only had small ones.

Q. You couldn't make much progress that way, could you?

A. Wasn't much progress, because we come out with a car of coal once in two weeks; that is all we needed.

Q. It was better; in other words, it would facilitate your handling of supplies.

A. Yes.

Q. And fuel, if that was raised at that point, wouldn't it?

A. No, it wouldn't facilitate it at all.

Q. Why?

A. Because we come through there all winter just the same.

Q. No matter how soggy. You say now that is probably sunk two or three feet since then?

A. No, I say the grade, the settlement in the grade there would be sunk.

Q. Then when you come down to it your only complaint, I take it, is they had you do it at that time, had you come back and change the grade?

A. Yes, and not let go ahead on the upper work.

Q. You are not objecting they had to change the grade, not blaming them for inefficiency?

A. We were down there once on short haul, and all set in the pits, and everything. Now, why order this move back? Why the extra expense?

Q. When you were there, Mr. Rajotte, could you have told it would be necessary to raise that grade? Just answer the question, then you can make any explanation you want.

A. I could have been told, yes.

Q. I say, could you have told, from examination there, you needed a better grade?

A. Well, I didn't know at that time how good a road bed he wanted when he started out.

Mr. Dobson: It seems to me it is asking a lot of questions on the engineering part of the work. The burden was not on the contractor to do those things.

COURT: He can answer the question.

Mr. Dobson: Save an exception.

Q. I will repeat my question, since I don't think your answer was responsive to it. At the time that the Rajotte-Winters Company left that part of the road bed, 100 to 122—Stations 100 to 122,—could you or your company, by a proper examination, whatever that means, have told or known or ascertained that it would be necessary to raise that grade three feet in order to keep above water?

A. No, I don't believe you could.

Q. Them by the same token the Whitney Company couldn't have told?

A. Yes.

Q. That is right, isn't it?

A. I don't know how good the judgment is between the two of us. They might, as engineers, have gone back. I can't check those basins back. In other words, when you go to put in drainage, you go back to the foothills, and you find the place there where there is water, and see what the fall is, and everything, and they check back with the area against what drainage they should have at these crossings. We never check back, see?

Q. Did you—meaning your company—ever haul a carload of coal over the track at the point between Stations 100 and 122 before this change was made?

A. Yes, we hauled coal over it, yes.

Q. Are you sure of that?

A. Yes.

Q. Where did you haul it to?

A. We hauled it up to the shovel working ahead.

Q. Sir?

A. Everything came out over that track.

Q. You hauled it right over the track?

A. Sure.

Q. Were you hauling it about the time Mr. Norris wanted you to go back?

A. Why, we hauled it right up to the machine two miles ahead.

Q. How strenuously did you object to Mr. Norris because he wanted you to go back and fix the road bed at that point?

A. Why, we wanted to put a little of the material where the shovel was at the time back there. Was good solid rock up there, we wanted to put a little of that on top, and let it go like that for the winter. Then they could trim it up.

Q. Did I understand you wanted to bring the shovel back?

A. No, we were digging then about Station 230, I think, along back of that. We wanted to take a little bit of that material and put it there.

Q. How did you want to take it—by cars?

A. On standard gauge track and dump it there. Wouldn't take very much, and let it go like that for the winter, and get up ahead.

Q. Did Mr. Norris want you to go back?

A. Said he would rather complete what Cole had opened up.

Q. Did you talk to him? Did he talk to you personally about that, or did he talk to Mr. Glavin?

A. Talked to both of us,—whether talked to me—I think he talked with me personally about it.

Q. Awhile ago you said you didn't remember whether or not—

A. I won't say positively.

Q. You said you didn't remember whether or not the shovel had already gone back before you came on the job?

A. Well, I don't know whether there was a letter from Mr. Martin or Glavin, informing me about it, whether I knew it had gone back at the time.

Q. How strenuously did you object?

A. Didn't want the machine to go back.

Q. Did you do more than express an opinion?

A. I expressed an opinion as to getting the machine ahead and getting the upper work done.

Q. The defendant is going to put Mr. Norris on the stand, and he is going to say you didn't object.

Mr. Dobson: That is objected to, what you are going to do with Mr. Norris.

Q. What I am going to ask you now, is how strenuously you did object, so I can get at what you mean. Did you say, "I don't want to do it, Mr. Norris", whatever you call him, "Bill, I think probably we better go ahead," or did you say, "Here, you are intermeddling, and I want to go on ahead." What did you do?

A. No, I said it is not what call railroading, to go back and do that work. What I wanted to do is to get across the bridge and go ahead. That is what I tell you.

Q. Did Mr. Glavin agree with you?

A. He agreed with me.

Q. And Mr. Norris was the only person of the Whitney Company that spoke to you about that?

A. Yes, he was the only one at the time. Yes, he was the only one.

Q. Who moved that shovel back?

A. I guess Glavin.

Q. That is your crew?

A. Yes, sure.

Q. Whatever expense there was in moving that shovel back was paid by the Whitney Company, wasn't it?

A. Correct.

Q. They paid you a percentage profit on that also, didn't they?

A. On that work back there.

Q. On whatever—

A. On the moving?

Q. On the moving?

A. Sure.

Q. Yes, that was the same as any other work?

A. That was the same as any other work, only it took the time away on the completion of the job.

Q. I understand you say it delayed you going ahead?

A. You bet.

Q. I just wanted to get it clear in the minds of the Court.

A. In other words, two moves, when we only should have one.

Q. But you were getting reimbursed for what you put out, and you were getting your percentage profit on that.

A. No profit on this work. Such a word never entered.

Q. You were getting five per cent, cost plus.

A. They had what the contract specified on the bills, on the payrolls.

Q. They were reimbursing you for the amount of labor, and adding five per cent to that?

A. Yes.

Q. Whatever you call it; we won't bother about that.

A. Yes.

Q. And they were paying you rent on this steam shovel on the basis of \$1500 a month while you were moving back?

A. Yes.

Q. How long did it take you to move back?

A. It wouldn't take very long.

Q. You can refer to any records.

A. Nothing on the record on that. No record of it when moved back.

Q. I thought you said two days. Do you know?

A. No, I will have to get the records, check the time, because I guessed at the time on the other your cost. I think I am right.

Q. You testified that considerably increased move, as near as I could. Doing too much guessing.

A. Cost of the railroad; cost, yes.

Q. Now, you spoke about a warehouse that was suddenly thrust upon you.

A. A warehouse site.

Q. A warehouse site. At the time you entered into this contract you said you didn't know that the warehouse was to be built at the station—what was it, 1 to 4?

A. Yes. I knew of nothing only the connection they had with the sidetrack. That is all; what this profile shows.

Q. You didn't know that a warehouse was to be built?

A. No.

Q. And you don't remember the map, so of course you can't remember—you don't know whether you saw it on a map or not?

A. I don't ever remember of seeing any map outside of this one.

Q. You said that you learned that Mr. Norris was to succeed Mr. Cole. Did the Whitney Company write you a letter on that subject?

A. Why, I knew that Mr. Norris was to take Mr. Cole's place.

Q. How did you know it?

A. In conversation with Mr. Hawkins would be about the first way I would get it.

Q. You have personal knowledge of all those changes which you claim were made and you testified to this morning?

A. Yes, sir.

Q. And yet you say that you were down on the

job only once some months, twice other months, and maybe three times some months?

A. Yes, sir.

Q. How does it happen that you personally were there when these changes were to be made each time?

A. I wasn't there when all these changes were to be made.

Q. Sir?

A. I wasn't there when all these changes were to be made. If there was some change that wasn't right, I would be notified on the phone, say they are making a change. If I could get away I would go on down. I had other work to look after.

Q. You had telephone notice or letter?

A. Sure.

Q. As to each of those changes you spoke of?

A. No, not as to each of them, probably didn't have two letters on all the changes. Was immaterial to us. It was the engineers. The only things was these first changes, and not getting up ahead, and getting the winter's work done.

Q. Changes were immaterial to you? You weren't concerned on that, you say?

A. Except the first changes. You understand the little changes we don't go so much on them.

Q. The first changes, you say?

A. The first changes was the main change that spoilt the job or getting the job done.

Q. Which were the first changes?

A. The first change at Station 17; and then going back from Mile 3 to 17, those two changes.

Q. How long did each of those consume?

A. They kept us around there until December, knocked us for our winter's work ahead. Understand we only had 7,000 yards we wanted to dig with a machine and get out of there.

Q. Do I understand you to say if it hadn't been for these two changes you would have finished this job by January 1, 1920?

A. By January 1, 1920. On the line as Cole described it, yes, sure.

Q. Well, as a matter of fact, you didn't finish up the nine miles, nine months after January 1st, isn't that so?

A. That is correct.

Q. How did you consume that extra nine months when you were only delayed three months by that first delay?

A. Well, nine miles alone your quantities ran over so much, you built another style line; you gave us thorough cut, loading, hauling, dump.

Q. You say these changes you didn't particularly care about; just those first two.

A. I meant as to my being notified. I didn't care about every little change. I wanted to work in harmony.

Q. How did Mr. Glavin know what changes you wanted to be notified about?

A. His experience would show him when that was up how much he wanted to tell us.

Q. Have you any of those letters he wrote you?

A. I don't think our files has over a dozen letters on the job.

Q. You were down there and personally know about each of the changes you testified.

A. Any change that I testified I am there, I was there.

Q. That doesn't answer my question. Each of those changes that you testified about as being a fact this morning?

A. Yes.

Q. You know of personally?

A. Yes.

Q. Now, you spoke this morning of being held up by the failure of the Whitney Company to have a bridge in, didn't you?

A. Yes.

Q. What was the bridge across there, what body of water?

A. Clear Creek and Down's Creek.

Q. Yes. Is there anything in the contract, this contract, or any other contract between you and the Whitney Company that requires them to build a bridge?

A. Nothing in the contract that I know of. There might be; I don't know.

Q. Did you think that the Whitney Company—was it your understanding when you were making these plans, that the Whitney Company had to build a bridge across these places?

A. Yes, sir.

Q. Where did you get the understanding?

A. Because I recommended and took care of the bridge contracts, and their ability I knew.

Q. That was the time you signed the contract?

A. No, that was afterwards; a couple of months or six weeks afterwards.

Q. As far this contract went, the Whitney Company didn't have to put a bridge in, did they?

A. Yes, they did.

Q. Where do you get it?

A. Why, we were both working together to cut the cost down, in harmony, and the Whitney Company had made an agreement with the contractors, the bridge contractors, and were going to get these bridges in ahead of us.

Q. Was that before or after you signed the contract?

A. After.

Q. I know, we will get to that. When you entered into the contract, was there anything in your mind that made you believe that the Whitney Company had to put in bridges, or were going to put in bridges?

A. Well, the lineup that we had with Mr. Hawkins and Mr. Cole was that they would do their utmost to get the bridges in, and we wouldn't undertake to do the work ahead of Clear Creek and Sam Down's and sign for January, 1920, unless they did.

Q. Did you have that understanding with Mr. Hawkins?

A. I didn't have positive understanding, but we

both knew from the engineers and myself; common sense.

Q. You don't contend, do you, or do you contend the Whitney Company was obligated to put in the bridges?

A. Sure, I do.

Q. Where do you get it now? Was that experience again that taught you that?

A. Well, it was the understanding that bridges were to go in. We were to jump Kilchis River, and go on the ground across Kilchis, and they were to have the other two in.

Q. Who obligated the Whitney Company to do it?

A. There is no obligation in that contract. That is cost plus a percentage contract, but when somebody, an engineer tells you something, you figure he is going to carry that out to the best of his ability, like I would with the contract.

Q. Who told you?

A. If it had been a unit price contract, that would have been signed up in there to get the bridges done. That is, we took them at their word, they would get them done, and they tried to get them done.

Q. Whose word?

A. Mr. Hawkins and Mr. Norris, or Mr. Cole.

Q. That was all before the contract was signed, was it?

A. We had taken that matter up before the contract was signed, took it up before and after. That is,

they agreed to do the best of their ability in things out there, to let us up the line.

Q. Had they mentioned bridges?

A. Yes, dwelt on bridges.

Q. Mr. Hawkins, before you entered into the contract, had agreed, for the Whitney Company, to put these bridges in there before you got up to there?

A. If it was possible to do it. He didn't positively agree.

Q. I understood you to say he did the best he could to carry that out.

A. He did. Yes, they did, you bet you.

Q. Why are you in court complaining, trying to get money because you were held up because the bridges were not in?

A. They done the best they could.

Q. You expected them to do more than they could?

A. I won't say the bridges couldn't have been put in. They made a hard try at it. In other words, they only delayed us a short time.

Q. You had made a claim in here against them for big money on the ground they didn't have the bridges there, and you couldn't push your steam shovel across when you got there. Now, you come in and say they did the best they could. Is that fair?

A. They signed up a contract to deliver the material to the bridges, as I understand. With the bridge contractor. In other words, in this kind of construction the bridges are always put in ahead.

Q. Now, you have fallen back on custom. It is the custom.

A. It is customary, yes.

Q. You have gone from experience to custom, and they did the best they could, didn't they?

A. I will cover it this way. Had they put the bridges in, they would have saved money for themselves.

Q. It is not very likely they would not exert every effort to cut the cost, is it?

A. As I said, the bridges could have been put in ahead of the shovel.

Q. Could the Whitney Company have done it?

A. Yes, they could have done it.

Q. I thought just now you said they were doing the best they could.

A. Considering the times, and the labor, and one thing and another, they done the best they could.

Q. Do you know what an effort they made to get the piles up?

A. You bet.

Q. Do you know Henry Sauce?

A. Sure. They had a great time. They had a tough time.

Q. Do you remember the time Henry Sauce was hired by the Whitney Company to pull logs out of the river bed?

A. Yes, I think they had a contract with somebody for getting them out of there.

Q. Who did this bridge work?

A. Parker & Shea. Shea & Parker, I think it was.

Q. Did you get anything out of that, sir?

A. Yes.

Q. How much did you make out of it? I don't mean the figures. What per cent were you to get out of it?

A. If they done well, were to give me ten per cent.

Q. In other words, you were to get something on the side, on this job.

A. Not on the side.

Q. I don't mean underhand.

A. Will you let me tell you how it went on that contract?

Q. Yes.

A. It come to the time when the bridges—we had to get a move on then. I think Mr. Hawkins had some bids. I can't say whether he did or not, but he wanted me to get a good bridge man, to recommend a bridge contractor. Shea & Parker had both worked for me, from the ground floor up, drove piles and done all kinds of nigger work—good men. I recommended them and took them up there, and Mr. Shea said to Mr. Hawkins—Mr. Hawkins asked Mr. Shea what he would do it for, and Shea said, “any fair price, Mr. Hawkins. What will you give me?” Mr. Hawkins set the price. Now before I took Shea up there, he told me he had a pile driver, full equipment, could load on the car and get it away within a week, and I had recommended him to the com-

pany, to Mr. Hawkins. All right, the week was up, and I said to Mr. Shea, where was his pile driver layout. He says: "We can't pull the rig off that job." I says, "I have to make good on this thing. We have to be there." Well, he promised me he would let Parker stay on the job, not leave the job, and Parker had worked where I was, and knew his business. I thought if got Bud down there, had his good experience, I could get right through. They had no pile driver. Well, I had OK-d the men, so I told them they could get a driver, and I would pay the bill. He had no money to carry himself with, so I told him I would carry it and take ten per cent on the job, if he wanted—if he came out straight. Fine. That is how I got out of that entanglement, and it come out we made a little money on it.

Q. You made a little money on the job, in addition to the other work?

A. I made a little, and that is the only money I made on that, on the whole job, is what I made of Parker. I state that now.

Q. Under the contract, Mr. Rajotte, you were to erect temporary trestles, weren't you?

A. Yes, sir.

Q. Why didn't you go ahead and erect a temporary trestle?

A. I wasn't to erect temporary trestle—you mean for the machines. They were permanent trestles.

Q. The approach to the bridge.

A. I was in this manner. If the rig was there,

and them boys could do it cheaper, while they had the rig there getting across, that is fine; run across. Whitney was paying the bills, why me bring in a rig there. That would be folly.

Q. Under the contract you were to erect the approaches?

A. Yes, approach to the bridges, yes.

Q. Wasn't your delay you charge against the Whitney Company's failure to build the bridges, really caused by your failure to have the approaches built on time?

A. No. In this charge here there is only the charge there one time the shovel ran up to here and stopped. That don't mean one. That means the few days it stopped, but you have to do a lot of preparatory work in hauling material, which I think they did. If this stuff has to be done cheap the day the fellow turns the bridge over to you, you are there; that don't signify nothing. Furthermore, after laying off a few days, the organization is always bad, then you have to reorganize again; that brings up the cost.

Q. Now, do you mean to say your failure to have the bridge approaches there did delay, or did not?

A. There was a slight delay in the bridges.

Q. That delayed you.

A. Slight delay. I am not kicking they did not try hard enough, you understand, because they did.

Q. When did you first learn the Whitney Company was going to take over this work under the provisions therefor in the contract?

A. Oh, I believe Mr. Norris kind of intimated that to me a month before, probably.

Q. A month before September 25th?

A. About a month before we quit. It came in very sudden, but I had a little—

Q. What is that?

A. It came in sudden. I didn't expect it when he came in, but I had a hunch.

Q. How did you have that hunch?

A. They were moving in the stuff then. They were going to work.

Q. Sir?

A. We had a mixed camp. They had sent their camps in ahead, and they had already built camps at headquarters. They were up in there, and had some of their men up there to get the line up, to log.

Q. You didn't really know it until you got the formal notice, did you?

A. Well, I didn't really positively know it but I surmised they wouldn't want a contractor up there. They bought a steam shovel of their own. They had six yard cars, they had locomotives, and for that reason any man who could manage a piece of logging he could manage the men on a little bit of grading. It was cheaper for Whitney to do it.

Q. You had a surmise?

A. Sure; I knew that naturally it would come.

Q. But when it did come, it was pretty sudden?

A. Well, I think from the service we gave, we should have had a few days' notice, is what I would say about it.

Q. A letter was put in evidence you received from them. You understood from this letter they were taking it over?

A. Yes.

Q. Under that provision in the contract?

A. Yes, they wanted to continue themselves, do their own work.

Q. But that says they were taking it over in accordance with the provisions of the contract for taking it over, doesn't it?

A. Yes, sure it says it if it is there.

Q. You felt they had a right to take it over, didn't you?

A. At any time. Any time during this construction they had a right to take it over. I told them that.

Q. I heard that this morning.

A. Sure I told them that.

Q. You are not complaining that they took it over?

A. I am not complaining.

Q. I just want to clear the atmosphere.

A. No, I have no complaint to make at all.

Q. They took it over rightfully, didn't they?

A. Sure, rightfully; correct. Except, as I say, today you have a bunch of men, and everything. I think, just as I say, if the superintendent or engineer of the Whitney Company should have gone to my superintendent or partner and said, "Probably in the next few days we will lay you off," it would have been

cheaper for the Whitney Company, and everybody else.

Q. He gave five days' time?

A. That was plenty of time.

Q. You mean just as a matter of courtesy?

A. If you go and give a man good service, and he cans you, you can't feel so good about it. He had the best we had up there.

Q. You think he didn't show proper appreciation?

A. Didn't show proper judgment; I don't think he did.

Q. But you are not complaining—

A. I never complained, though.

Q. —that they wrongfully did it from a standpoint of their rights?

A. It didn't bother me or the management. We had plenty of work.

Mr. Freed: Now, if the Court please, we haven't a transcript of the testimony this morning, and therefore it is impossible for us to finish our cross examination, and we would like to dismiss the witness now, if we may have the privilege of cross examining him when he is called again.

COURT: I suppose you will have that privilege.

Mr. Dobson: I don't object, although I think counsel was rather thorough.

REDIRECT EXAMINATION

Questions by Mr. Dobson:

I just want to go into a few matters here that Mr.

Freed brought out. When you talked of the additional expense due to delays in putting up these bridges you had in mind, did you not, the expense incident to the general disorganization of your forces; is that correct?

A. Just actual time lost, you see; monkeyed away; lost time.

Q. Didn't these delays generally disorganize your work?

A. It did; it does. Any time you lay off.

Q. That was the principal cause of your complaint in this first case, in the beginning of the work, was it not?

A. Yes.

Q. General disorganization. When you said something about immaterial changes, you didn't mean to convey the impression to the Court that the changes to the line up above Klichis River there were immaterial?

A. No, no. The first little minor changes. Oh, no, not the line above, no.

Q. Now, while we are on this subject, when you entered into this contract you say you went by the profile, estimates shown on the profile and character of the work, etc., in conjunction with your conversation with Mr. Cole, and your examination. Is that right?

A. Yes, sir.

Q. And the yardage shown in the contract on the profile?

A. Yes, sir.

Q. Did you also at that time consider that there might be some changes or deviations?

A. Yes, sir.

Q. Did you make due allowance for that?

A. Yes, sir.

Q. Did you have in mind the changes that were made?

A. No, not the changes that were made.

Q. From your experience, Mr. Rajotte, is it or is it not a fact that you always make in contracting on this class of work, you make some allowance for change?

A. Look at the profile, look at the quantities on the bid form, and that is what we expect to do.

Q. Was there any discussion with Mr. Cole or Mr. Hawkins, or any one that you talked to prior to making this contract, to warn you in any way that there would be such increased quantity to move, or such conditions to encounter as you did encounter in this work?

A. None whatever, only that—you said as to conditions.

Q. Yes.

A. Myself and Cole thoroughly understood one another that we had to get in ahead, or we wouldn't get done.

Q. Now, referring to this drainage proposition. You have been engaged in this line of work for a good many years, as I understand it?

A. Yes, sir.

Q. And you are familiar with the customs in that line?

A. Yes, sir.

Q. Is it the custom for the engineer to decide upon the drainage of a district or road bed to be built?

A. Yes, as a rule, yes, he is the man.

Q. That is the engineer's duty?

A. That is the engineer's duty.

Q. Is it the duty of the contractor to do that?

A. No, it is not the duty of the contractor.

Q. I believe you said—

A. That is as to location of pipes for drainage.

Q. Well, drainage means the proper location of the pipe so as to take away the excess water that might accumulate over the road bed. Is that what you mean by drainage?

A. Yes.

Q. No, Mr. Rajotte, there was something said about your knowing weather conditions up there. Had you had any work of this nature in that country before?

A. Well, have worked from Vancouver to the California line on the coast. Odd spots a little different.

Q. When you first met Mr. Cole, that was in 1917 or '18, wasn't it?

A. 1918.

Q. You didn't make this contract for one year thereafter?

A. Met him in the middle of 1918, and went out early in 1919, and made the contract in June, 1919.

Q. Now, in going over this work at that time, with Mr. Cole, referring to the profile, referring particularly to that part of the right of way or road bed shown between Southern Pacific Track at Station about 100 up to 150 or 154, was there anything apparent to you at that time to indicate that that road bed as indicated and laid out on the profile would be below the water mark?

A. No, there was nothing there at the time.

Q. Was there any discussion between you and Mr. Cole in that respect?

A. No.

Q. Now, one other point. Referring to this instance which I questioned you about on direct examination, and Mr. Freed questioned you about on cross examination, that was the incident where you were required to move your steam shovel back from Station about 231 back to Station 17 to fill in this particular section we are talking about. Mr. Freed asked you if the shovel had been moved back at the time you talked with Mr. Norris, and I believe you said you didn't know.

Q. In checking myself on that I objected to it, so it must not have been moved.

Q. What I want to get at, I want the court to know whether you did actually know at that time whether that shovel had been moved back to this point, or started to have been moved?

A. I think I knew it was going to be moved.

Q. To get at the real facts, do you now recall at about what point upon this road bed or right of way, or your operations you met Mr. Norris at that time?

A. Around the camp at 145. It was along between about 145 and 150.

Q. That is where you met Mr. Norris?

A. Yes, that is where we had our camp.

Q. Do you recall whether there was any one else present at that time when you had that conversation with Mr. Norris?

A. Why, there were three or four, but I think myself and Matt talked with Norris at that time.

Q. When you say Matt, you mean whom?

A. Mr. Glavin.

Q. Your superintendent?

A. Yes.

Q. Are you able to state at this time whether he was there or whether he was not there?

A. He was there.

Q. You are certain about that? You are sure about that in your mind at this time?

A. Yes, Matt started the work, and he was there that fall, all fall.

Q. On direct examination, in relating to this matter, you said that you informed Mr. Norris at that time that it would cost him approximately \$15,000 to make this move at that time?

A. Yes, I made statement of that amount.

Q. Does that refresh your memory as to whether or not the shovel had been moved?

A. I don't know whether the machine had gone

by, or not—had gone back down or not. I can't positively say.

Q. In any event you know you had conversation with Mr. Norris concerning it?

A. Yes. The only way I can check that, is from the daily record. Every day—most of the days I was there, the daily record will show, and the daily record will show when the machine went by.

Q. While we are on that question, so the court may better understand the difficulties encountered on that move, I wish you would tell the court the character of the pit which you were required to move the steam shovel, and the condition under which you had to work at this time?

COURT: The first move or the second? 234 back to 17?

Q. I think that was—

A. 231 back to 17. That is Station 230 back to 17.

Q. Well, Mr. Rajotte, the pit that you opened up for the purpose of making this extra fill through there, was that substantially the same location you had your shovel in on the first move?

A. It was the same material on the opposite the side track. There was a flat there.

Q. In other words, both of these pits that you operated from when you moved your shovel back, were substantially the same location; that is to say, Station 17?

A. Yes, practically.

Q. Now, Mr. Rajotte, what I want you to tell

the Court, referring now to the second move of the shovel where you moved it back for the purpose of making a fill across the tracks, 107 to 122, or thereabouts, just tell the Court the character of the pit you had to place the shovel in, and the condition, and the difficulty you had to work with at this time.

A. Why, the level of the ground where we put the machine in, the borrow pit the top of it was practically level with the track, and we had to sink with the machine, and we had kind of conglomerate and cement gravel, and we dug five or six or seven lift along there. That would be underneath the old track, and there was no drainage there, but the material was hard, and when we got down there you see we were practically at tide level, and everything had to drain in the pit, so we had soft track and bad track to take care of. The men had to work in gum boots in there; very expensive pit, and one of the most expensive pits on the job.

Q. Was it raining at this time?

A. Raining quite a bit; no drainage—enough drain to the pit.

Q. In that connection you have alleged in your complaint here that you had to employ from twenty to thirty more men. Just explain to the court why that was necessary?

A. Well, the fill was soft where we dug the material out. That is what we came back for, the reason we filled.

COURT: Are you referring to 17?

A. You see this profile at this plant here, Sta-

tion 100 east, and from this point here, where you come this way, starts at one, two, three, four, ten, a thousand feet. This is from one to forty. This was from hundred out that way. This was Station 17.

COURT: When you raised the grade, it was from this point?

A. Were all filled grades in here.

COURT: When you moved the shovel back in order to raise the grade, how far back did you move?

A. About here, about two miles.

COURT: Moved back to 17?

A. Yes, then opened another borrow pit, and raised this grade through here. Then the track is down the cut here. The first grading that had been done, but had been brought up to the grade that the engineers gave us through there.

COURT: That is from 100 to 120?

A. Yes. So we went back, and that is the kind of pit I opened up, and of course low dump. Then they ordered grade for side track.

Q. So that at this time you moved back that was additional work?

A. Additional work, yes, plus this in here they put a connecting track; that shows right here. They filled all of this in here and made a little yard. We put a roundhouse and machine shop in there, and warehouse in here, and couple of switches up in here, and we had to house extra men to take care of the material on light dump, and extra men in the pits. It was impossible to get men in the pits unless went in

two or three feet. The men had to wade in with boots.

Q. When you say you had increased cost in operating the steam shovel at that plant, just tell the Court, as briefly as you can, the force of men necessary to operate the steam shovel plant from this point to make this fill. That includes the forces here and the forces up here. Just explain to the Court that situation.

A. Well, in other words, three—you can operate a machine with no loading and cast. Take about ten or twelve men, ordinary run, with average material, short haul; not large overhaul; we carry twenty-five or thirty men, that is a full crew of machine men. In a fill of this kind you have to take and keep the men on the job, sixty or seventy men.

Q. Why was it necessary to have so many men on the dump?

A. You didn't have heavy enough raise to get rid of the material; has to be scattered and taken care of.

Q. What was the condition of the material at that time?

A. The material was wet, as we took it. It was pretty good material. Of course the bucket had to hit the water going out, and when got to the bottom, had a soft bottom, had a lot of material to put in there.

Q. Was there any difficulty in getting this material out on the dump cars, when you come to the point of wanting to put on the cars?

A. Yes, while operating there the rain ceased. We worked in the snow and frost, too.

Q. What did that mean with respect to operation?

A. More expense in picking out this track and digging out the cars. Had to clean the cars regularly, and all that work, getting the sand and dirt.

Q. Suppose you had done this work during the dry season when the material was dry, how would you have handled the material at this point where raising the grade,—from dump cars?

A. We didn't intend to shovel in there; that was team work.

Q. I am speaking of what would have been the situation if the fill had been dry?

A. If summer in doing it?

Q. As to the matter of getting the material out of cars.

A. It is pretty hard to estimate; we carried four times the crew there at that time of year to what we would in summer.

Q. I don't believe you get my point. I want the court to understand the nature of the difficulties you encountered because of this material there being wet and sticky in getting it out of the cars, as compared with getting it out of the cars if the material had been dry.

A. You want to know as to cost?

Q. No, the difficulties; the nature of the work in the summer time; how would you get the material out of the cars in the summer time?

A. In the summer time only have three or four men on the dump; just enough to spread the material.

Q. Would you need any men in the cars?

A. Put men in the cars to clean the cars out.

Q. Would you do that in the summer time?

A. No.

Q. That is what I want the Court to understand.

A. You see in the summer time we would use about twenty-five men on that, and we had to use about seventy.

Q. I want the court to understand why you would need seventy men at that dump instead of twenty-five men in the summer.

A. The cars had to be cleaned out, so much frost, and working in the pit had to change the labor with wet pit all the time; had to have a heavy crew.

Q. Now I want to ask—one reason for going into the matter is to see whether or not that refreshes your memory as to the conversation you had with Mr. Norris as to the propriety of making that change at the particular time he did. Do you understand the question; do you understand prior? I mean the feasibility or advisability of doing that work at that particular time?

A. Well, I remember telling him that I was giving him—well, Norris complained, put it in dollars as to the amount of money, but that wasn't what the main object was; was about going ahead, up ahead with a shovel, because the winter's work was up there, and we were stealing all the time down here.

Q. Did you, or didn't you, tell him—on cross examination and on direct examination, too, you referred to the fact that it wasn't really necessary to make the fill at that time; is that so?

A. Yes, I advised him it was not necessary.

Q. Was there any discussion between Mr. Norris and you as to the cost of making that fill at this particular time or at some later time?

A. He said it didn't matter what it cost, he wanted to get Cole's work cleaned up at any event, then we would go, that was what he told me.

Q. I want to know, did you or did you not, tell Mr. Norris at this time that this particular change in this grade he wanted made there could be done cheaper at some other time, that is, if he did it at some other time?

A. Yes, I told him that I didn't want the shovel to go back, and I must have talked to Norris before it went back.

COURT: When did you begin work under this contract?

A. About ten days after they had the contract.

COURT: Ten days after the execution?

A. After the execution, yes.

COURT: Where did you commence work first with the shovel?

A. Station 17.

COURT: How long did you work there?

A. We worked there—I have the records giving the dates—over a month.

Mr. Dobson: We will have all that data in detail a little later.

COURT: Then you moved to where—154?

A. No, we went on up to 140—145.

COURT: Before you came back?

A. Yes, we went and done work at 54 and went on to 230, then we moved back.

COURT: That is, moved back a second time?

A. Yes, moved back a second time.

Mr. Dobson: I wasn't sure by the questions asked whether you are clear on this point.

Q. Mr. Rajotte, it wasn't your plan, however, to commence work at Station 17 with a steam shovel plant?

A. No shovel work contemplated at 17.

Q. You were simply diverted, as I understand, when you moved the steam shovel plant from this point there, going across the S. P. track back to 17, and at that time were headed way up the line with your steam shovel plant to 154?

A. We were leaving for 154 to do the first work and then go on above.

Q. When the steam shovel plant arrived at this point they diverted you back to 17, is that the situation?

A. That is it.

Q. Now, Mr. Freed asked you a good many questions bearing upon your ability to determine from what you might call a bird's eye survey of the work up there beyond Kilches Creek. I will ask you this: From your examination of this land or work,

in conjunction with what Mr. Cole told you as to quantity, were you able—were you reasonably certain as to the amount of work you would have to do in there, and the character of the work when you made your contract with the defendant here?

A. I knew the character and the distance.

Q. Mr. Freed referred to dimensions of the road bed; you didn't change the dimensions of the road bed did you?

A. No.

Q. Did you at all times build this road bed in accordance with the directions of the engineer?

A. The roadbed calls for fourteen foot fill, I think and eighteen foot cuts; I think the side cuts would be sixteen. But there is places there where there is a large change in the road bed, but not on account of the contractor. If they were changed, they were ordered so by the engineer.

RECROSS EXAMINATION

Questions by Mr. Freed:

Mr. Rajotte, how did you arrive at the statement that doing this work in the winter, or in the rainy season increased the cost 60%? Where did you get your figures?

A. Steam shovel work, you mean?

Q. Yes, I think that is what you referred to.

A. Take ten men on the dump, four men in the pit, shovel crew and one shovel outfit, which is about twenty-five men, ordinary summer weather here on the Coast. They would probably bring you in six

hundred yards a day on thorough cut work, that is, we dump and load everything, and along in after November, when you get good heavy rains, in that formation of material you would do very good if the same crew could get two hundred and twenty-five yards.

Q. How did you expect to do that work if Mr. Norris had let you have your way as you claim he didn't, and not go back at that time?

A. Now, don't get me wrong there; I don't claim the second move—

Q. What?

A. I don't claim so much on the second move, as to the price, you understand, but at the first, we should have got away above there; but we figured to send the machine up there without any cars, dinkies or track, and send a crew, that is, she would dig and cast and borrow as she went, and make the best road bed as would suit the machine, and suit the railroad, then we would go in, as we would say, eighty thousand yards; we would straighten up our lines with probably eight or ten thousand yards, and take the best material and slip a dinkey and cars up along.

Q. You still don't answer the question. You said you didn't want to go back to Station 100 and 122 at that time and raise the grade?

A. No, I didn't.

Q. But you wanted to go ahead?

A. Sure.

Q. And go back in dry weather; that is, do the work in dry weather?

A. Yes.

Q. Now, suppose Mr. Norris had not insisted, as you say he did, how would you raise this road bed, with steam shovel or by hand?

A. Which road bed?

Q. At 100 to 122? That is what you have been talking about.

A. We would have left the road bed the way it was; we could get over with the locomotive and equipment ahead, and this track was out to say, Station 120; this track was out Station about 200. Meant a little lack where we moved the shovel back to catch the track; I don't know just how far they had moved back.

Q. You don't seem to understand.

A. Yes, I do.

Q. Answer the question, then.

A. Give it to me again and make sure.

Q. You didn't want to go back to Station—

A. No, I didn't want to.

Q. All right; I understand you there. Maybe I can shorten it this way: You say you intended when you did go back in dry weather to do that work, raise that grade by hand?

A. Do the finish up work when the machine was on the way out of there.

Q. That is, you intended to do by hand, if I understand right?

A. No, no, not by hand.

Q. How did you intend to do it?

A. Well, the track was good enough to go over

that. We intended to take a little material where the shovel was at that time; that was the hardest rock on the job.

Q. You say you would leave that material there until the following spring and go up and get it?

A. No, the place where the shovel set at the time when he ordered the move back, that is the best material on the entire line to hold road bed with. The bad spot was down at Station 100 to 120, the good material was up about Station 230. I wanted to take some of that material where the machine was, and load it and run back there, and told him at the time that I didn't figure any credits as to percentage for overhaul on it; was a long haul; a little of that gone back there would leave the track in shape so we could always get across and get to the front. We hauled nothing more down there, but if we didn't put there, was enough poles and everything, we could get across; we were going every night back to and fro. Was unnecessary work to go and open up a pit at that time of the year. In fact to save a month where we were then was worth three months ahead; that is, we would gain that time if we got the machine up ahead.

Q. You evidently don't understand my question yet; if you had taken some of that material from 230 like you wanted to.

A. I didn't take any.

Q. If Mr. Norris let you and you had taken some of it, and temporarily fixed that road bed, you intend-

ed at some future time to go back and conclude that, didn't you?

A. Yes, sir.

Q. That is what I was talking about. When you would have come back in the next spring you would get dry weather. How would you—where would you have gotten your material? You made a statement on that point.

A. Why, we would have taken material, the most suitable material and the shortest haul to that spot.

Q. What with? What would you have used?

A. Steam shovel.

Q. Would have used steam shovel in any case?

A. Yes, because we had the track down then, standard gauge track, probably if had been left there would have been raised from the ballast pit.

Q. You don't understand me yet. Would you have done it by hand?

A. No, we done the grade in the first place by hand.

Q. Now, in spite of this borrow pit with two feet of water you told the Court about—

A. There was six feet of water.

Q. All right.—Onerous conditions under which you did work, you say now, as you said then, that the Whitney Company was getting that work done about as cheaply as anybody could get the road bed built for?

A. The way the weather was, and at that time of the year. Nobody loafing on the job, and all old-

timers there doing the work; I don't know how you would beat it; that's the idea; I don't want it understood was anything in the management; fine and dandy.

Q. How do you claim that requiring you to go back—I assume that to be true by this question—and making you do this work under the conditions such as you relate to the Court—how do you claim that that damaged you? That is, how do you come into court and ask moneys from the defendant by reason of that? You got paid for all you did, didn't you?

A. No, I did not. I went up there and built the line and we haven't got one cent profit; we have the books here.

Q. You were reimbursed for any outlay that you made in going up there and digging out that six feet, weren't you?

A. We were paid costs plus 5% for what we did.

Q. The more it cost the more you got?

A. Yes, a 5% cost plus.

COURT: Were your payments made on unit of material moved?

A. No, on the payroll.

COURT: You got from Whitney and Company return for the money you expended, do you mean?

A. Yes, they paid us 5% on roll and supplies; that is what the contract called for.

COURT: The fact that you had to have sixty men in place of twenty-five didn't affect you in any way, otherwise than you got 5% on overhead?

A. I was working on base cost; if I built the line

for a certain price in a certain time was to get a larger percentage.

Q. Not within a certain time?

A. I signed for January, 1920, in the contract.

Mr. Freed: We will bring that out; I don't think that counsel would contend that time—

Mr. Dobson: We were required to do this work by a certain time.

COURT: That is the contract specified that the plaintiff should do the work in not to exceed a certain time?

Mr. Dobson: That is the situation.

Witness Excused.

A. FObERT, a witness called on behalf of the plaintiff, being first duly sworn, testified as follows:

DIRECT EXAMINATION

Questions by Mr. Dobson:

Q. Your full name is what?

A. Alec Fobert.

Q. What business are you now engaged in?

A. At the present time?

Q. Yes, at the present time.

A. Farming.

Q. Where do you live?

A. Hubbard, Oregon.

Q. I will ask you whether or not you are at this time or ever have been connected with the Rajotte-Winters Company, a corporation?

A. Yes, sir.

Q. And are you now, or were you ever an officer of that corporation?

A. Yes, sir.

Q. I will ask you whether or not you were an officer of that corporation during the months of June, July and August, 1919?

A. Yes, sir.

Q. Are you still an officer of that corporation?

A. No, sir.

Q. Now, do you know the defendant of this case or its officers, the Whitney Company?

A. Some of them, not all of them.

Q. Do you know Mr. Norris?

A. Yes.

Q. Do you know Mr. Cole?

A. Yes.

Q. I will ask you whether or not you had anything to do with the making of this contract that is in controversy in this suit?

A. What do you mean by that?

Q. Were you present at any conversation before the contract was signed?

A. No, sir.

Q. Did you have anything to do with it?

A. No, sir.

Q. I will ask you whether or not you were on this work at any time?

A. I was part of the time.

Q. Were you over the work before the contract was signed?

A. Not just when they got the contract.

COURT: What is that?

A. I went down there after we got the contract.

Q. You were there after the contract was signed. I wish you would just relate to the Court in your own way the reason why you went upon this work and the circumstances and who you met when you went down there and what you went for.

A. I went down there with Mr. Glavin and Mr. Crook to meet Mr. Cole to line up, start on the work.

COURT: What time was that?

Q. Do you remember about the time?

A. I couldn't give you.

Q. The 24th of June the contract was signed.

A. Well, it was shortly after.

Q. Just relate to the Court why you went down there, what you did, and who went?

A. I went down with Mr. Glavin to meet Mr. Cole and give him the line-up on the start of the work. Went down there and met Mr. Cole and we went over the first part of that work.

Q. Mr. Fobert, just take the profile at this time and indicate to the Court what part of the work you went over with Mr. Cole?

A. Yes, sir. Station about 26 we started about Station—where they dumped—

COURT: What number?

A. Station 26.

Q. Just a minute. Indicate the station to the Court. Can you read and write?

A. Yes, sir.

Q. Can you read the figures on that profile?

A. Yes, sir.

Q. Well, can't you refer to the figures on the profile; you can refer to the stations as indicated on the profile?

A. Yes, sir.

COURT: You went over from 26 how far?

A. We went over from 26 to the Southern Pacific track where the stations start out.

Q. Is that the only part of the work you went over at that time?

A. Then we go in Mr. Cole's machine and he took us over this work here, over to the cemetery with the machine, we drove right up to cemetery cut with the machine, Station 160 with the car.

Q. Did Mr. Glavin go with you?

A. Mr. Glavin and Mr. Crook.

Q. I wish you would tell the Court just why you and Mr. Glavin made that trip in that way?

A. To get the line-up right and get the work started as quick as possible. We went over this cut here and we decided to put the shovel here. That was the first piece of work for shovel, pick this cut and take the shovel on through ahead. Get across the river before the water raised, so we would be able to cross.

Q. Was there any other reason why you wanted to get across that river besides the water raising in this particular stream, was there any other reason?

A. Yes, we wanted to get up there and wanted to get the benefit of dry weather, do more work.

Q. Was that discussed with Mr. Cole at the time?

A. Yes, sir.

Q. Now, did Mr. Cole say anything about using the steam shovel this side of the cut at that time?

A. Not a word.

Q. Go ahead and state what you did.

A. Then we got into this car and we drove up to Station 230, along there, 232, along there, and shows on the way over; shows the right of way along the machine; in places you could see and in places you couldn't, in the timber, and come to Station 232 we crossed the grade; bridge was to go across the railroad; railroad right there; then we went on onto the opposite side of the river, and we could see along from the machine part of the road between the river and the hill, and we went up about, I judge, a mile with the machine, then we walked up the river a little further and crossed the cable bridge, an old foot bridge, an old cable bridge, and went and hit the grade just the other side of Clear Creek Station here.

Q. Station 240?

A. Forty or forty-two, somewhere along there; hit the station along there, and went down Clear Creek from this cut down there, and then we come back and went up as far as Sam Down's.

Q. That is about Station—

A. That is following the center.

Q. That is about Station 380?

A. 380, yes, sir, and we looked the grade over, there was a side hill. Where we first started was

one thorough cut, just a short way, and hit the side hill, more side hill there in the line I went over, and then we hit a flat, then hit a little side hill, then Sam Down's—100 feet, Sam Down's.

Q. While up there, did you have any discussion with Mr. Cole as to the manner in which that work was to be done?

A. Not very much.

Q. What was the purpose of gong up there?

A. To look at the work; he was going to show us the work for an idea of right of way; that is, the main part to get the right of way cleared. Couldn't grade without having the right of way cleared.

Q. In examining the first part of this line, beginning with Station 17, what was the nature of the work to be done in that stretch there, that part of the work from Station 154 back to the beginning of the line? That includes all that part west of the S. P. track. What was the character of that work?

A. From 154?

Q. Back this way?

A. We was going to do that with a team scraper.

Q. Now, Mr. Fobert, did you and Mr. Cole actually discuss the manner in which that work was to be done?

A. Yes, that is what I went down there for.

Q. What was said by you or by him?

A. We all agreed together it was the best way to do that work there, light work and natural team work.

Q. That included work west of the track and work east of the track?

A. That included all that light work.

Q. Who suggested that the steam shovel plant should be placed at cemetery cut or about Station 154?

A. I suggested, and they all agreed to it.

Q. Did you tell that to Mr. Cole?

A. Told Mr. Cole.

Q. Did he make any objection to that?

A. No.

Q. Now, did Mr. Cole at this time say anything about using the steam shovel back at Station 17?

A. No, sir.

Q. When did that discussion first come up?

A. About moving the shovel down there to 17?

Q. Yes.

A. I wasn't there on the job.

Q. So you know nothing about that?

A. Mr. Glavin had charge of the job.

Q. Mr. Fobert, I would like to have you give the Court, if you can, more in detail, the conversation that took place between you and Mr. Cole and Mr. Glavin. You were all there together, I understand.

A. We were all there together.

Q. Concerning the plans for beginning this work and for carrying it on, and the time you expected to do it in?

A. We discussed the first work; they would get the shovel placed in the right place, and do all the light work with the team. Was going to do the

cemetery cut at 154 with steam shovel. Was a long fill ahead of that, then would shoot the shovel across the river before high water; that was agreed.

Q. Right there, an important question. Did you, or did you not, discuss with Mr. Cole at that time any other reasons for getting this shovel across this river?

A. To get the work done in the time it had to be done.

Q. Why, was there any particular reason why a rush about it?

A. Rush?

Q. Yes.

A. We didn't have time to loaf around, take our time, we had to push the work through to make it, had to be in a hurry with it.

Q. Did the possible water conditions you might encounter have anything to do with it?

A. Why, what do you mean?

Q. Wet or bad weather. Was anything said about encountering wet weather up there?

Mr. Freed: A leading question.

A. To get across the river, or after we got across?

COURT: Why they were going to take the steam shovel across the river?

A. Was going to ford the river.

Q. Why were you in a hurry to do that?

A. When it got to raining, and the river rose you couldn't do it.

COURT: You wanted to get across before the river raised?

A. Yes, was just a little bit of water, wasn't over two feet in the deepest part, bottom solid gravel, nice and level.

Q. That was the only discussion you had with Mr. Cole about that?

A. Yes, sir.

Q. How long were you up there?

A. Just about that time.

COURT: How long?

A. Just that afternoon at that time.

COURT: How long did you stay there on the work? Did you stay there at all?

A. No, didn't anybody stay there then; went up and got the outfit shipped down there.

COURT: Did you stay there after the work commenced?

A. No.

Q. Just simply went up to make plans for location. Did you have any discussion with Mr. Cole at this time as to the character of the equipment that you were to use on the work?

A. Mr. Crook done that.

Q. I mean, did you have any discussion yourself with Mr. Cole?

A. No.

Q. You didn't talk with him as to the kind of equipment you would have or the force of men?

A. That was all arranged, all to be arranged through Mr. Rajotte.

Q. That is, equipment and so forth?

A. Equipment.

Q. Just a matter of location of that equipment that you went up there for?

A. Yes, sir.

CROSS EXAMINATION

Questions by Mr. Freed:

You were the only official of the Rajotte-Fobert-Winters Company, as it was then, that was in on this conversation. That is, Mr. Glavin, and Mr. Crook were under you, weren't they?

A. Yes, sir.

Q. They were your subordinates?

A. Yes, sir.

Q. And you were there for the purpose of arranging with Mr. Cole, the engineer of the Whitney Company—

A. Yes, sir.

Q. As to how the work should progress?

A. Not that.

Q. As to what?

A. To start on.

Q. How should it be started—the plans?

A. To get it started, we brought camps afterwards; started the work first.

Q. Was Station 154 beyond the river? You said you wanted to get across the river?

A. The river is about a mile further.

Q. You wanted to start at 154 so you could work up and cross the river before the river rose too high to ford it?

A. Yes.

Q. And as far as you know, that was your only reason for requesting that location?

A. Yes, sir, because that had to be done to make time.

Mr. Dobson: I want to make this statement now. Later on in the case to take this work in an orderly way and I want to call this witness back to connect up certain things.

Witness Excused.

Whereupon proceedings herein were adjourned until ten o'clock tomorrow morning.

Thursday, October 25, 1923, 10 A. M.

MATT GLAVIN, a witness called on behalf of the plaintiff, being first duly sworn, testified as follows.

DIRECT EXAMINATION

Questions by Mr. Dobson:

Q. Where do you live, Mr. Glavin?

A. At Lyle, Washington, at present.

Q. What is your business?

A. At present subcontractor.

Q. Are you in the employ of the Rajotte-Winters Company, the plaintiff in this case?

A. I have the subcontract under Grant-Smith Company on that same work up there.

Q. Were you ever in the employ of the Rajotte-Winters Company?

A. Yes, sir.

Q. Were you in their employ during the period

they were engaged in the construction of this road bed for the defendant?

A. Part of the time, yes, sir.

Q. Were you in their employ at the time of this contract?

A. Yes, sir.

Q. I will ask you to state whether or not you were in the courtroom yesterday?

A. Yes, sir.

Q. And you heard the testimony of Mr. Fobert and Mr. Rajotte?

A. Yes, sir.

Q. State whether or not you accompanied Mr. Fobert at the time he first went upon the work for the purpose of making plans and preparation for proceeding with it and carrying it on?

A. I did.

Q. I wish you would state to the court in substance just what was done at that time.

A. We went up over the line.

COURT: Who do you mean by "we"?

A. Mr. Fobert, Mr. Cole, Mr. Crooks and myself went up over the line at that time getting ready to put camps. That was the reason I went along, to look up and get camp sites. I was going to take charge of the work. I don't remember whether a contract was signed or not, but we were making preparations for starting our camps. We picked out the camp sites for the men up over the line, and made plans where we would start our steam shovel, build our camps, etc.

Q. Just about what station on the line had you planned to make your first camp and establish the steam shovel?

A. We planned on building camp about 148 and starting our steam shovel at Cemetery cut, approximately Station 154, I think.

Q. Go ahead and state what else was done at that time if anything?

A. Mr. Cole took us over the line from Idaville up to past Sam Down's Creek.

Q. Now, Mr. Glavin, state just what was the reason or purpose of Mr. Cole taking you up the line beyond that point, beyond the creek?

A. We were looking over the work. Mr. Crooks, Mr. Fobert and myself.

Q. What was the idea of looking over the work at that time?

A. Getting general ideas how to handle the work, looking at the class of material.

Q. Was there a discussion between you and Mr. Cole and Mr. Fobert or a conversation in Mr. Cole's presence wherein you discussed the manner in which you expected to work at the upper end of the line?

A. Yes, we discussed it.

Q. Will you just tell the court in substance what that was?

A. Mr. Cole and Mr. Fobert and Mr. Crooks discussed it. Mr. Cole's idea was to get in there as soon as we possibly could with a steam shovel plant; get up over the line as fast as we could on account of the weather we would probably hit along in the fall, get

over Kilches River just as soon as possible. That was the impression Mr. Cole wanted to leave; we could get started at Cemetery cut, Station 154.

Q. What was the specific reason for wanting to go on; that is, get beyond Cemetery Cut?

A. Wanted to get the line built as quickly as possible.

Q. Was there any other reason or condition to their mind?

A. Of course we couldn't cross the river unless we got started.

Q. Was that the only reason?

A. That was the main reason. We had to get up there that part of the work, and get over the river, and up to the other part of the work in the fall and finish it as soon as we possibly could.

Q. Did the season have anything to do with your rushing the work up there?

A. Makes quite a lot of difference.

Q. Wasn't that one of the reasons discussed?

A. The reason—the weather condition to get up there before we hit the bad part of the weather; makes a great difference in running.

Q. Mr. Glavin, was there anything discussed as to the manner in which that work was to be done up there?

A. Yes, sir.

Q. What was that?

A. The general outline, we were to get across the river and go through with the steam shovel, and cast most of the material on the side work.

Q. We want to be sure the court understands the operation of casting. Will you please tell the court what that means?

A. Your Honor, here is the cut like that, and the shovel would come along, the grade runs along maybe probably half way through the cut; the other half of the grade like that; and come along and cast. The steam shovel to make this, to save hauling in the dinky cars, or anything like that. That expedites that part of the work. That was side hill work up through there. Some places the center line comes along like that, but that was the general idea at that time, we could go through and do the work that way, just cast over and make the other side fill, and save hauling. Of course some clear cut; would have to haul clear cut. That was the idea, we were to cast that material; could cast it and get along.

Q. In that operation what would constitute a crew for the operation of the steam shovel, in a casting operation?

A. Well, you would have to have about six or eight pit men, and then your top man for water and hauling the coal; run probably eighty or ninety dollars a day; a hundred dollars a day, approximately.

Q. Suppose that was what you call a thorough cut. Suppose you had to make a thorough cut and go through there and not cast the material over the side. What would your shovel crew consist of?

A. The shovel crew consisted the same number, but have to grade for your dinky tracks, and make preparation for hauling material. Sometimes neces-

sary to build timber trestles, temporary trestles to dump off.

Q. That would mean have to lay a special track to operate your dinky engines.

A. Yes, sir.

Q. And you had in connection with that a number of cars?

A. We had eighteen cars.

Q. Wouldn't you have to have additional men to operate these cars?

A. Yes, sir.

Q. About how many?

A. That depends somewhat on the material. If wet and bad weather, it takes additional men. If a high dump it makes a little difference. If it is a high dump, you can use less men, of course; if low, and the class of material makes a lot of difference, softer kind of material, that is.

Q. Now, in that particular country, the material is substantially the same?

A. Practically.

Q. The same general character?

A. Just about the same. Some of it was good material, and in wet weather some a little sticky, and different class.

Q. Mr. Glavin, are you in position to say at this time what the additional cost would be in the handling of these cuts up there as a hauling proposition, compared with the original plan of casting the material?

A. No, I don't know. Of course that depends on how far it is hauled.

Q. The point I want to get at, Mr. Glavin, if possible, at this time for you to give the court any accurate figures on that proposition. If it isn't—

A. I couldn't exactly give them any accurate figures on that.

Q. I am referring to this work generally?

A. No, sir, I could not.

Q. Could you give the court some idea as to the approximate difference in cost, the percentage based upon your experience?

A. Well, some—of course that altogether depends on the cuts too. Some probably run thirty per cent, some forty per cent additional cost, some less than that.

Q. What I want the court to know is this—you were on that work?

A. Yes.

Q. And you were there when they were making a good many of these cuts and fills?

A. Yes.

Q. And you had some idea of the difficulties, etc., they encountered there in making these cuts, didn't you?

A. Yes, sir.

Q. And you had some idea as to the difference in cost in building that road bed if you cast the material over the side, as compared with having to cut through the center and make thorough cuts, as we term it?

A. Of course some of those cuts are not thorough cuts.

Q. Can you refer to the profile, Mr. Glavin?

A. Yes, sir.

Q. Now, to get at this matter a little more definitely, I will ask you to state how far did you go up on this work; that is to say—

COURT: You mean with Cole before they began the work?

Q. Yes, just fix that point first.

A. Right in here.

Q. About what station?

A. About Station 390.

Q. Now, were these cuts that you would have to make in the construction of the road bed, were most of them above that point?

A. A lot of cuts above that, and quite a number down through below.

COURT: Are those cuts you speak of shown on this profile?

A. Yes, sir.

Q. Just point out to the court where they are, in getting at the Cemetery cut there.

A. (Showing profile) There is a cut. That is the Cemetery cut; a thorough cut right there. We first figured to put the steam shovel in here and haul all that ahead to this fill, is a fill here, to borrow fill; we got a little extra material and made a fill instead of making a borrow on the side, side borrow, one thing that increases overhaul sometimes on these cuts; that was the first cut. We figured on doing

it with our shovel right there. We had a camp right in here, Station 148. In these little woods right off the side. This is a side cut. These are side cuts, we figured on casting this over the side, running along, coming in here. Sometimes it takes a little more material. This is side work, all figured side work.

COURT: Did you actually cast the material?

A. No, sir, we hauled most of that. Cut here and hauled back in this fill, and hauled some ahead. Changed it from the way we originally planned doing it.

COURT: Where did you expect to get the material to make these fills back here?

A. Made a borrow pit right here for this particular fill.

COURT: Why didn't you follow out that plan while doing the work?

A. This particular piece right here was first figured in team work. Didn't have enough—

Q. We will get this a little later. I want to give some general idea along the line. While we have the map open here, can you—first, I will ask you this: were you there all of the time the plant was engaged in this work?

A. No, sir.

Q. And how far had they progressed with this work at the time you left up there?

A. About Station 448.

COURT: That would be four miles?

A. No, sir; that is on Mile 7.

Q. Between that Station 154, and Station 448,

I wish you would just take that profile and generally point out, or state, rather at what particular points you made thorough cuts which were originally planned to be a casting proposition. We will take them up in detail a little later on.

A. I can't just remember offhand about these cuts.

Q. Just state all that you can remember at this time?

A. Quite a long time ago. We figured on casting all of this through here. I think one or two of these cuts.

COURT: Between what stations are you talking about?

A. Between Station 280 and Station approximately about 310, from really about Station 260. We figured on casting them—mostly side work.

Q. Now, is there anything on the profile—

A. There are two or three little thorough cuts in there that are just like all the thorough cuts.

Q. What station would that be?

A. I think between 300 and 310. I am not absolutely sure about that, there was a thorough cut. This was figured on; thorough cut here from 340 to 380, that is a thorough cut.

MR. FREED: What does he mean by thorough cut?

MR. DOBSON: Cutting through and not casting the material on the side.

Mr. FREED: You didn't intend to cast at these points?

A. No, sir; from either one. From there on up to Station 410 was side work, could have cast that. Everything there above that, I wasn't on that work, didn't familiarize myself with it.

Q. Now, Mr. Glavin, did you have any conversation with either Mr. Cole or Mr. Norris, his successor, as to any changes that were made in the work, requiring that to be changed from a cast proposition to a hauling proposition?

A. When Mr. Norris came he changed the line from about 273. That is the right of way clearing. We had to clear additional right of way up through there, and necessitated change of the line through there, and a little—

COURT: From where?

A. From about 273 to 375, approximately; we had to do additional clearing along the side.

Q. That would be a distance of about how much in miles? Would be approximately a mile?

A. Yes, over a mile.

Q. Now, Mr. Glavin, reverting back to the beginning of this work, where did you actually begin your construction work?

A. Began our construction work clearing at about Station 148 for our camp, and building our camp, and started our clearing up ahead at Station 154, where we figured on starting; was the first work on the job.

Q. I will ask you first what was your duty and position up there at the time?

A. Supposed to be superintendent on the job.

Q. You were there immediately following Mr. Fobert's trip up there?

A. Yes, sir; Mr. Fobert was with us the first time we made the plan for starting work.

Q. When he left, did you take charge of the work?

A. Yes, sir.

Q. Now, for the purpose of establishing the fact as to what your plans in detail were, for carrying on this work, just where did you plan to place your shovel plant?

A. We planned to start at Station 154, at the Cemetery Cut, and move up from Idaville when the shovel came in, and start east.

Q. In reaching that conclusion, whom did you confer with, or consult with?

A. Consulted with Mr. Fobert, Mr. Cole and Mr. Rajotte.

Q. Now, did you when you started your shoveling operation, did you place you shovel at the station 154?

A. No.

Q. Where was that shovel placed?

A. Started about Station 17 west, when unloaded at the Southern Pacific tracks.

Q. In order to start at that point, what change did it make in your plans?

A. Made us move west of the S. P. tracks, and work a month there instead of going east.

Q. What did that mean with respect with your going ahead with that work at this particular time?

A. Meant a delay of going on head work, of probably over a month, and hitting bad weather, you see, delayed us a little more.

Q. Was there any discussion about that between you and Mr. Cole at that time?

A. Our plans and the orders from the contractors, Mr. Cole's station was at 154, and just before the shovel arrived Mr. Cole figured we should go down in the meadow and make a borrow down at station approximately 17 west. I said to him something about this, and he said: "I am chief engineer on this job, and you go just where I send you."

Q. Can you fix the time when the steam shovel plant was moved into this borrow pit at Station 17 west?

A. The first week in August, 1919.

Q. Have you any record that we can refer to at this time which will fix that date definitely?

A. Yes, our daily reports, the package over there, our payrolls and labor for the month. Mr. Martin can find that.

MR. DOBSON: Will you find that, Mr. Martin? I would like to have that in the record.

MR. MARTIN: I didn't hear the question.

A. The distribution for August, 1919, August 5, I think.

MR. FREED: We will furnish the date, if you want it.

A. I think it was the 5th of August.

MR. FREED: I think it was.

A. First week in August.

Q. Mr. Glavin, what additional work, just state generally, was incurred by having to move the steam shovel plant back to Station 17 at this time?

A. Well, we moved down over the flat; approximately eight or nine hundred dollars; building temporary trestle for dumping, laying a dinky track.

Q. Just what did that—how much dinky track did you lay there?

A. We laid about—had to lay seventeen—nineteen hundred feet, a little over two thousand feet; to get across the S. P. track you have to lay probably over two thousand feet of dinky track, and haul some material over seventeen or eighteen hundred feet.

Q. Now, what other items and additional expense do you recall that you incurred by that move?

A. Additional expense of overhaul on the material which the side borrow would not indicate; as shown by the profile would be just side borrow.

Q. What does the profile show as to that?

A. Shows a side borrow of 10,320 yards, just along the side of the work.

Q. You know what the actual overhaul was at that point?

A. Figured approximately, 70,000 yards, first overhaul up there.

Q. How much a yard would that be?

A. Three cents a yard.

Q. That amounted to about how much?

A. \$2100; amounted to that much overhaul. That increased the overhaul by doing steam shovel work instead of team work in that particular instance.

Q. In other words, your original plan, as indicated by this profile, was to do this work at that point with the team, what you call hand and team work?

A. Yes, sir.

Q. Do you think the entire additional expense incurred there——

A. Building temporary trestles, that amounted to approximately \$500.

Q. What was the necessity of building temporary trestles?

A. Had to fill it from six to seven feet, and run your dump cars over and dump them, to put the fill in.

Q. I will ask you if you have made some calculations as to the increased cost of the operations there?

A. Yes, sir.

Q. Showing what they total?

A. Yes, I made a few of those on paper.

Q. Is this the result of your calculation?

A. Yes, sir.

Q. Now, I will ask you whether or not you claim these are absolutely accurate? ,

A. No, sir; they were taken off the daily reports and it is approximate. They may have more than

that. There were items the Whitney Company carried, for instance, trestle timber, etc. I couldn't give exactly what it cost. The Whitney Company furnished the timber in this sort of work; they also took care of the fuel we burned in our steam shovel, etc., and I couldn't give it accurately.

Q. So you could only get the items——

A. Our labor; our labor cost, our payrolls, really.

Q. Just explain to the Court where you got the figures?

A. Just took these off our daily reports, of the time the shovel was on there.

Q. What do your daily reports show? Do they show distribution of some kind?

A. Show distribution of labor performed each day, of all the men on our work, and the sort of work doing. For instance, if the men were building a trestle, show them building a trestle, or dinky track or grading. Distribution kept of all that.

Q. What was the total of that?

A. Shows about \$8,000. That is what it cost additional. That is what it cost to go down there.

Q. To make it clear to the Court, what was the expense that was incurred that you didn't contemplate at the time you started in on this work?

A. Your Honor, the team work, if we had to do it by teams, would not be so much for going down the last month, and that is what it cost us going down there. The work——

Q. That isn't the point. That was expended on

character of work there that you had not contemplated?

A. Yes, sir; of course if we had taken out with team——

Q. Of course you had to make the grade?

A. Yes, we figured on doing it with team work.

Q. Wasn't there some additional work in the nature of filling?

A. We filled in probably a thousand yards extra where there was a change on the Y, and where they were figuring on putting in a warehouse. Filled around so as not to get in the foundation.

Q. What additional work did that involve?

A. Involved short trains there to carry it out; the way the engineer had put this, we had to use our short trains, and dump two or three cars at a time to make the dump conform with the measurement of the building, so as not to get any down in the foundation, where going to dig the foundation. That was extra labor, and slow operation—slowed up the operation of dumping.

Q. Was any additional clearing or grubbing done on that account?

A. Of course some additional clearing and grubbing for the warehouse there. Some for the line anyway, was additional clearing and grubbing; in fact, Mr. Cole let a contract for the clearing and grubbing.

Q. Did you encounter any delays by reason of the clearing and grubbing?

A. We encountered delay; the sub-contractors

who were doing this work had a donkey engine that was absolutely no good, and they couldn't clear. Sometimes we had to move our horses down ahead, and help them out.

Q. Did that delay your operations ahead to a great extent?

A. The delay was probably three or four days, and the delay was on the clearing, of course.

Q. That is what I mean.

A. Yes, made a little material difference.

Q. Mr. Glavin, how long were you in this—for how long were you at Station 17? On this additional operation we have just been talking about?

A. Approximately a month.

Q. Are you able to fix the date when you moved out of there?

A. Finished digging there August 30.

Q. How do you get that date?

A. Taking off our daily report showing our distribution.

MR. DOBSON: I think that time is correct.

MR. FREED: We won't have any dispute on the date, I am sure.

Q. Now, then, what did you do? Where did you go?

A. Started moving up ahead, and moved our shovel to a little cut, about Station 148 - 145, in there. About 143 the cut is, that is where we moved next.

Q. When did you start operations at that point?

A. Probably the first or second of September.

Q. In other words, you started operating up there just as soon as you could move the plant to that point?

A. Yes.

Q. That would take a matter of two or three days.

A. Yes, to take the plant across over the grade.

Q. Mr. Glavin, was there any additional work or expense incurred for that operation?

A. No, not in that operation.

Q. And the next cut you moved to was what?

A. Cemetery Cut, Station 154.

Q. Was there any change and additions there?

A. No, sir; we started in there, and I think we started there about September 9.

Q. Do you recall, Mr. Glavin, at about what point you encountered any additional work that was not contemplated at the time when you moved on up the lines?

A. Yes, sir; we had to finish grade at Station 184 to 200, along there, considerable trouble of finishing the grade, on account of grade stakes.

Q. Just explain to the Court what that was.

A. We were operating our shovel there. The instrument man or engineer of the company had given us the grade two or three times. Our shovel checked pretty close to the grade, but when the finishing grade was set, we were off a foot; some places six-tenths of a foot, and we finished that, and they changed again. Changed two or three times there,

took some time to finish that part of the work and was an additional cost.

Q. Who was responsible for that situation?

A. The instrument man at that time was young Mr. Cole, brother to the chief engineer.

Q. Do I understand now that this engineer would go along and set stakes to indicate to what point you should finish the grade?

A. Yes, sir.

Q. And you had finished to that point?

A. Yes, sir.

Q. And after that was done, you would be required to go back?

A. Required to finish that cut on account of the thing not checking.

Q. In other words, would they change the stakes at a subsequent time?

A. They changed those stakes, yes, to make them check out. You see the fellow made some errors, where they made the first place or the second, of course I cannot say, but they were made anyway, and we had to do some extra finishing work there along in October—it was pretty bad weather.

COURT: What station, do you remember?

A. Station 184 to 200, along in there, approximately.

Q. Have you any idea what the additional costs were, as the result of that?

A. Probably \$400, along there.

Q. What was that for?

A. Just for extra work, refinishing, and some-

thing we couldn't help at all; finished to the grade. We first cut it down to the foot; built it up again to make the grade, and then they changed it.

Q. Was there any additional cost with respect to having to haul material in connection with the operation.

A. We hauled some material later in there for ballast, and rock, for rock bed, on account of being a little soft; to take care of it.

Q. Was this ballast proposition a part of your grading contract?

A. No, sir.

Q. Was this additional work, or work you hadn't planned?

A. Really additional work. It was to haul back on standard track; just to pick the track up.

Q. That the Court may understand the situation, the plaintiff in this case had a separate contract for ballast—another contract?

A. Not at that time.

Q. Later on they had a separate contract?

A. Yes.

Q. The point is this: The ballasting material is a different operation, is it not?

A. Yes.

Q. You had nothing to do with that?

A. No, sir.

Q. Now, do you recall any condition which involved extra, additional work at Stations about 249 and 252?

A. Well, we made a borrow pit there and hauled back. Probably an additional cost.

Q. Why was that necessary?

A. When we first went up there, we figured on doing borrow in there, side borrow, with teams.

Q. Does that indicate on the profile that was the character of work to be done?

A. Yes, sir; it is side borrow up there, 6520 yards. We were going to go up there with our teams as soon as we finished down in the flat. Shortly after that, Mr. Cole told me he didn't think the right of way was wide enough to make the borrow on the side, and leave a berm for the fill, so I had to trestle up there. Said they didn't really secure enough right of way.

Q. Will you just explain to the Court what that meant in connection with making a fill? You might consult the profile.

A. We figured on just this side work through a farmer's field, were going to take teams and put it up and make it a team proposition, much of it.

Q. Where does it indicate that was side borrow work?

A. Right here.

Q. How is that indicated on the profile?

A. It shows side borrow from here to here, 6524 yards. We were going to put in teams. Not having enough right of way we had to go in here and establish a borrow pit, and haul this back; made additional overhaul, and caused the building of a temporary trestle and dinky track.

Q. Now, the Court may have some misunder-

standing about the depth? What does that indicate, the depth?

A. About eight feet, approximately seven or eight feet, about an average of six or seven feet.

Q. And was that a feasible operation to make that fill by side borrow as you have indicated there?

A. Yes, would have been all right; very good material.

Q. And I understand the only reason that was not done they didn't have sufficient width in the right of way?

A. That was the idea. Not enough to leave a good berm and take sufficient material.

Q. What are the stations there? Between what stations?

A. The fill is about 238 to 248, approximately.

Q. Now, Mr. Glavin, approximately, what did that operation cost up there? That is, the additional cost as the result of having to do that work in that manner?

A. It would increase the overhaul by making a borrow pit, of course, and making temporary trestle. I don't know just exactly how much it would increase it?

Q. Have you made any estimate?

A. I made a little estimate on it.

Q. Is this the estimate you refer to?

Q. And in making that estimate you referred to these daily distribution books, as you call it?

A. Yes, sir; the cost of the trestle, and the track

laying, etc., and what the additional overhaul would be.

Q. Mr. Glavin, do you recall any other instance where there was additional work encountered?

A. Station 273 was additional clearing. They widened the clearing, when we completed the clearing through in the fall.

Q. Beginning at what station, and ending where?

A. Station 273 to 375.

Q. You were on the work at this time?

A. Yes, sir.

Q. And do you know who did that clearing?

A. Mr. Sweeney did most of the additional clearing. We did the clearing through ourselves.

Q. The original clearing?

A. The original clearing.

Q. What did this additional clearing indicate?

A. They changed the line a little, changed the line, threw it up the hill in some instances, changed it; and of course the clearing had to be changed.

Q. Referring to Stations 384 to 416, approximately, do you recall the work that was done up there, the changes ordered?

A. It was all hand work up through there, done by hand.

Q. Was that done—did you contemplate doing that work in that way?

A. No, sir; we didn't on the start.

Q. I wish you would refer to the profile, and

just tell the Court the character of the work indicated between these stations on the profile.

A. This is little side cuts. We figured on just doing shovel, casting some of it, hauling some of it. Instead of that it was done by hand. That was quite an increase in cost. The labor at that time was expensive and was hard to get a great deal of work out of them. That was done by hand. Afterwards we moved in here.

Q. What was the station?

A. At Station 390. We took a cut out by hand, 387. We afterwards moved the steam shovel in and made a borrow pit there in about the same place. Had we known the borrow was going in there, we could have used the steam shovel in there and taken it all out.

Q. Who directed you to do that?

A. Mr. Fobert, Mr. Rajotte in connection with the Whitney Company, and at that time Mr. Fobert was on the work.

Q. You were superintendent?

A. Yes.

Q. Was that your idea, the work should be done in that manner?

A. No, sir; I wanted the shovel. That is the way we first contemplated doing the work. It is more expensive by hand.

COURT: Who did you say directed the change?

A. My instructions were from Mr. Rajotte and Mr. Fobert. Mr. Fobert was on the work at this time.

They had instructions to get hand men in there and rush the work.

MR. DOBSON: We simply explain the work was done in this manner, but will later show the instructions really came from the defendant.

Q. What I want to get at is the fact concerning the doing of the work in that manner; that is, the increased cost, etc.

A. We figured we could have gone through there probably on a casting proposition, not hand; that is, if we were allowed to cast over the side, instead of that hand work, which is very expensive.

Q. How long did it take you? Have you any records showing how long it took you to do that work through these stations?

A. Yes, sir; we have them.

Q. Is this the memorandum you refer to?

A. Yes, sir.

Q. Now, can you state about when these operations were commenced?

A. One cut was commenced on April 1st to the 12th, Stations 394 to 398.

Q. 394 to 398?

A. Yes, sir.

Q. Just carry right on through there, showing the length of time.

A. Station 399 to 402, from April 7 to 30. Station 399 to 402, from May 1 to 10th, that is the second time. 403 to 407, April 9th to 30th. Station 407 to 411, April 14th to 30th. 407 to 411, May 1st to

31st. That is April and May. 411 to 414, May 1st to May 6th.

Q. Mr. Glavin, suppose you had done that work as you originally contemplated, by the use of the steam shovel plant, how long would it have taken you to go through these cuts?

A. If it had been cast could have gone through, probably, in twenty days; cast the material over.

Q. What was the total time required to do it in the manner done?

A. About two months.

Q. Approximately 60 days?

A. Yes, quite an increase of cost in hand work.

Q. Have you a statement there to give the Court an idea of what the increased cost was?

A. The actual cost of it, on just pay roll labor alone, was about \$11,600. Of course we didn't use the—there was some powder used and horses. We didn't keep any track of that. Figure casting—probably shovel would cost, pay roll \$180 a day. Shovel work and hauling and everything wouldn't be over thirty six hundred.

Q. The difference between these represents the increased cost of having to do this by hand instead of the use of the steam shovel?

A. Yes.

COURT: What was the amount of the extra cost?

A. About \$8,000.

Q. That gives the Court all the items?

A. Yes, sir.

Q. There were other items of expense, I understand, that you have no way of getting at at all?

A. Yes, sir; the horses used on the work, and the powder. Shooting powder; material had to be shot in some instances; couldn't shovel by hand. Of course the powder was furnished by the Whitney Company.

Q. Glavin, you heard Mr. Rajotte's testimony yesterday in connection with the move back from part of this work?

A. Yes.

Q. And that I believe was between stations 100 and 125, or thereabouts?

A. Moved back from station about 231.

Q. That is where the shovel was at that time? I am referring now to that instance. About what station did they move back to, as a matter of fact?

A. They moved back to station approximate eight west.

Q. That was the steam shovel moved back at that point?

A. Yes, sir.

Q. Were you present at the time Mr. Rajotte had his conversation with Mr. Norris about that matter?

A. I was present when the shovel was down there, and heard the conversation, when they had the shovel down in the pit.

Q. Did you hear any conversation between Mr. Norris and Mr. Rajotte prior to moving the shovel?

A. No, sir; I did not.

Q. You were not there at that time?

A. No, sir.

Q. You recall, however, the instance of moving the shovel back?

A. Yes, sir.

Q. Will you just tell the Court in substance what was done?

A. We were digging at station 231 and 233 at the time. Digging rock down; at station 100 to approximately 125 the track was just laid through on the ground, practically on the ground, and was under water, and he wanted it picked up and additional yardage put in for side track there, and work for warehouse and machine shop.

Q. Was this sidetrack, is that shown on your profile?

A. No, sir.

Q. Machine shop site, was that shown on your profile?

A. No, sir; not machine shop.

Q. Right at that point I will ask you to state whether or not you ever saw a map of any kind or blue print of any kind at the time you started upon this work, which indicated that this sidetrack was to be built?

A. I never saw a map. We had a profile when we went over the work. I never had any map, never saw a map.

Q. I will ask you to state whether or not this blue print which I have, Plaintiff's Exhibit 1, is the only map or blue print or profile, or whatever you

choose to call it, that you had at the time you took charge of this work?

A. Yes, sir; the same profile.

Q. And that was to be used by you in carrying on the operation up there?

A. Yes, sir; Mr. Cole handed us this profile.

Q. And you are positive he gave you no other map or blue prints of any kind?

A. No, sir; never saw any other map on the job.

Q. Now, Mr. Glavin, just what did you have to do to make this fill between stations? What were the stations, by the way, that you made this additional fill?

A. About station 107 to 126, along in there, approximately.

Q. And just about what stations did you have to make this additional fill for the sidetrack?

A. Those are the stations.

Q. Those are the stations?

A. Yes, sir.

Q. That is, referring to that part of the grade which you said was under water and had to be raised up, what station was that?

A. That was along—was under water from 112 to 122, along in there, just approximately.

Q. And I will ask you to state whether or not immediately prior to the time you made this fill you were using this road bed for any purpose?

A. At the time we moved back we had the track over that. We used standard track hauling the stuff ahead.

Q. Did you use that road bed largely?

A. Nearly every day had an engine over it.

Q. Was there any real necessity for raising that grade at that particular time?

A. Well, it was a bad track, and under water, of course.

Q. The point I want to make, Mr. Glavin, could that work have been deferred until some later day?

A. It could have, of course.

Q. Now, in order to do this operation, just what did you have to do? What work was encountered?

A. We moved our steam shovel back, and started a borrow pit at station 8 west.

Q. Did you have to open up this borrow pit, or was there one there at this point?

A. No, sir; we opened up a new borrow pit. That was along in December, and very wet rainy weather, and of course the surface water would run in our pit after we started; were digging in cement gravel and of course the water couldn't run out of it, and our pit had a lot of water in it.

Q. What way did it interfere with the operation?

A. We took this material, very wet material—cold and freezing weather, and of course when we hauled it the top would freeze in the cars some time, and used much force to clean the cars each time and pick it out; and then raising the track to keep the track up. Of course the track went down as fast as we raised it almost, on account of the material being so wet.

Q. As I understand, if you had done this work at the season when you could have handled dry material, a lot of this additional work would have been eliminated. Is that true?

A. Yes, sir.

Q. Do you remember ever having had any discussion with Mr. Norris about that?

A. Yes, sir; I spoke to Mr. Norris when we moved down there about the cost, and getting in bad weather down there. It would be expensive because of not a very suitable borrow pit.

Q. Were you there on this operation all the time?

A. Yes, sir; at that time was there all the time.

Q. Can you state now about how long this additional work was, how much time it required?

A. We moved down the first week in December, and were there until the middle of January?

Q. And it was about how long, approximately?

A. About 33 or 34 days, probably 35 days.

Q. Have you any estimate?

A. Yes, sir; I dug up estimate, yes.

Q. As to the additional expense, or rather, the expense incurred by this operation at this time?

A. Yes, sir.

Q. Is that it?

A. Yes, sir; those are the items.

Q. What is the total of that?

A. Total, \$9,704.95.

Q. And you arrived at that how?

A. Took our daily reports and took the distribu-

tion of each day for the time we were in there, and the work being done.

Q. And does that include all the cost of that operation?

A. Of course the engines—we were using standard engines and cars, and those belonged to the Whitney Company, but of course at that time we didn't have our own dinky, and were using their cars and standard track.

Q. Is there any other item of expense?

A. I think that is probably all at that time. Of course, expenses we didn't have any check on.

Q. Now, Mr. Glavin, I will ask you to state whether or not you had any means or method at the time of carrying on these operations of determining as you moved from station to station, or from mile to mile upon the work—determining what the actual cost of the work as a whole was?

A. No, sir; I had no way of determining that exactly.

Q. And why not?

A. We never got an estimate by the month at any time out on the job. We couldn't figure what it cost if we moved it any time. I never saw an estimate while I was there, so I couldn't tell what the yardage there comes to.

Q. In other words, you were never furnished an estimate from month to month as you moved along?

A. No, sir; never saw an estimate on the job.

Q. Never furnished an estimate as you moved

along, as to work ahead you were going to be required to do?

A. No, sir, shown the profile.

Q. That is the only thing you had?

A. Yes, sir.

Q. Was the profile. Now, Mr. Glavin, you know from your observation at the time you were on this work there, that there were a number of changes made in the line?

A. Yes, sir.

Q. And that involved extra and additional work?

A. Yes, sir.

Q. I would ask you to state whether or not it would have been possible for you, in view of the fact that you were given no estimate to have calculated accurately, or with a reasonable degree of certainty the increased cost of your operation by reason of these many changes?

A. No, I couldn't—actual cost.

CROSS EXAMINATION

Questions by Mr. Freed:

Q. Mr. Glavin, how long had you been with the Rajotte-Winters Company, or Rajotte, Fobert, Winters Company at the time this work was done?

A. Just started with them on this job.

Q. What were you doing just previous to that time?

A. With the A. Guthrie & Company for ten years, contracting engineers.

Q. What was your position with Guthrie & Company?

A. Superintendent of construction for a little over eight years with them.

Q. Is that the company that Mr. Nat McDougall is connected with?

A. Yes, sir; here in the city.

Q. What was your position?

A. I was superintendent of construction from 1910 to 1919.

Q. That is to say, you occupied the same position with them that you occupied with the Rajotte, Winters, Fobert Company on this job?

A. Yes, sir.

Q. Where were you? You worked in this vicinity at this time?

A. Worked in this vicinity and Canada and through the northwest. Four years in Canada during that time.

Q. Did you ever occupy the position, or have the job of timekeeper for Guthrie & Company?

A. Not since 1909.

Q. From 1909 on you were superintendent for them?

A. Yes, sir; on steam shovel work practically all the time.

Q. That is, you had the same duties that you had in this Rajotte-Winters Company?

A. Yes, sir; different sorts of work.

Q. Now, Mr. Glavin, you said a good many times in your answers to Mr. Dobson, that you expected,

or that you planned, or intended to do a certain part of the work a certain way. How did you arrive at these expectations and intentions?

A. When the work was first planned out, Mr. Rajotte, Mr. Fobert and Mr. Cole, when they first went on the work, that was the plan.

Q. At first Mr. Rajotte and Mr. Fobert were not there together, as I understand?

A. Mr. Fobert and I and Mr. Crooks were there the first time together.

Q. I want to know just what part of that intention you got on that first trip, and what part you got at any other time?

A. We talked that part over at that time.

Q. Who talked it over?

A. Mr. Cole, Mr. Fobert and myself the first time we were on the job.

Q. How much intention did you gather then? What did you talk over?

A. Talked over how we would handle the work, align the line, and when we got up there, past the Kilches River, allowed to go and cast because that was their own land; that is on their own land, and we can go and make a side casting proposition.

Q. Did you start from the beginning where the road bed—from the place where the road bed was to begin, and go right on up to the Kilches River with Mr. Cole and Mr. Fobert?

A. We started down the flat, looked over the work in the flat.

Q. Where is the flat?

A. Up at Station 18, 17, down below the Southern Pacific tracks, west, looked over that part of the work, went up through the field.

Q. Were you progressing continuously?

A. Yes, sir.

Q. Were not skipping anything?

A. The first time?

Q. Yes.

A. We moved over the little flat—

COURT: Did you follow the line as staked out?

A. Yes, sir.

Q. You went then from Station 18 where?

A. We moved over a little piece, to station probably 107, to probably 126, we moved over that little flat, and smoothed it up for moving our shovel over.

Q. You mean you did actual work at that time?

A. We just smoothed it up for our shovel.

COURT: You did that the first time?

A. Not the first time. He asked when we moved the shovel.

Q. No, here is what I started out to ask you. You spoke in your testimony a number of times that you intended, or that you expected, or planned, or thought, that the work would be done a certain way. And your contention is it was done a different way. Now, I am asking you where you gathered this intention and plan and expectation from, and you said to me that you talked it over with Mr. Cole and Mr. Fobert on that first trip.

A. Yes, sir.

Q. Now, I am asking you how much of that in-

tention and plan did you gather from that conversation and survey, or whatever it was, with Mr. Fobert and Mr. Cole?

A. Gathered it all at that time. Then when they came on the job at different times—

Q. Just take that time. How much did you gather that time, how much of it? Did you go up from Station 18 to the Kilches River, and plan out each foot or hundred yards, for instance?

A. No, sir.

Q. You couldn't do that?

A. No, sir.

Q. How much did you do?

A. We went to Cemetery cut.

Q. That is is 161.

A. No, 154. At that time the clearing was not done through there, and pretty hard to cut through there. He took us on up to Kilches River. We looked at that side work through there. We went on up to Sam Down's Creek.

Q. What station?

A. 384.

Q. That is as far as you went?

A. We went beyond that.

Q. How much of your plans did you make at that time?

A. I told you Mr. Cole said when we crossed the Kilches River we could side cast. Down below that was something couldn't be side cast because not on their own property, but after crossing the Kilches River and side hill work would be allowed to cast.

Q. You were looking at it at that time?

A. Yes, sir.

Q. You could see as you went along?

A. Part of it; couldn't see all.

Q. Now, before you got to the Kilches River, how much planning did you three gentlemen do at that time?

A. Planned to put in trestle at Station 161 through on the fill, and haul Cemetery cut on the steam shovel. Was a thorough cut, and had to be hauled up there.

Q. You then arrived at the conclusion, you three, as to just what part up to the Kilchis River should be done by steam shovel, what part should be done by hand and horses, and what part should be where you should dump, and what you would have to haul? All that was planned out.

A. Surely; shows right on.

Q. I don't care what shows.

A. We planned out.

Q. You planned that time. You say is shown on that profile?

A. Shows thorough cut here, and fill by this station, surely.

Q. I am not talking about any special station. I am asking you if you made your plans at that time as to just how you were going to do all this up to the Kilches River?

A. Most of it we made. Some you have to make after you go on the job. You can't make that all the first time, you know.

Q. You can't tell, in other words, when looking it over. That is what I want to know.

A. Couldn't tell just exactly.

Q. Nobody could tell.

A. Every little item.

COURT: How long were you on that trip?

A. That first time? Just a day going over there.

Q. Now, Mr. Glavin, didn't you look up and down the line and see a good part of it from a distance of half a mile, that is, you were half a mile away from some of it, weren't you?

A. Walked over the line from Sam Down's right over the center line, the line of survey, Sam Down's to Clear Creek through there.

Q. What stations, so the court can get the stations?

A. Stations 330 to 375.

Q. You walked over that. The rest of it you didn't walk over.

A. Walked over the first part; through timber below Kilches River we didn't walk through.

Q. You walked over the part beyond Kilches River? In walking over it, you thought you were going to make dumps, going to dump the material. That is that was personally inspected, that part where you expected to make dumps?

A. Yes, sir; we walked that part of it over the center line, you see.

Q. Now, Mr. Glavin Mr. Fobert was your superior, wasn't he, there at that time?

A. Yes, sir.

Q. How much of this information did you get from Mr. Fobert, and how much did you get from Mr. Cole, and how much did you get from that profile?

A. I can't say just exactly how much I got from each one.

Q. Where did you get this information?

A. We talked it over there. I don't know just how much I got from each place.

Q. You don't know whether Mr. Cole gave you any of this information or not, do you?

A. He certainly did.

Q. Which did he give you? That is what I want to know.

A. He said would be all right to cast that out over the side through there, across the Kilches River.

Q. You have evidently been drilled nicely on the casting. I am not talking about the casting, any of these things. Other things besides casting.

MR. DOBSON: We object about the witness being drilled.

Q. I withdraw that. Let's not talk about casting. Let's talk about any other changes. Was casting the only change made?

A. You asked me about dumping, didn't you?

Q. I asked one thing. How much does that profile show there? How much information can you get from the profile?

A. Get a whole lot.

Q. And the conclusion, or plans that you and

Mr. Fobert and Mr. Cole arrived at coincided with what that profile shows? That ought to be easy to answer.

A. Pretty closely along there, yes, sir.

Q. In other words, then, you departed from the work as planned, only so far as you departed from that profile. In other words, that profile shows the plans.

A. Shows the yardage and material through there on that part of the line as located.

Q. Did you know there was a Y to be made at Station 1—Station 4?

A. Yes, sir; Station 1 to 4—no, sir, I knew there was an interchange track from 1 to 4.

Q. I mean an interchanged track from 1 to 4?

A. Shows on the profile.

Q. Does that profile show how broad that right of way was all along?

A. No, sir; doesn't show anything about how wide we cleared the right of way.

Q. I am not asking about how wide you cleared. I am asking if it shows how wide a right of way the Whitney Company had?

A. No, sir.

Q. How broad a right of way do you think they had across there?

A. Some places 60 feet, some places 40.

Q. How did you arrive at the fact they had 60 feet in some places, 40 in other.

A. Mr. Cole told us some were 60, some 40,

which should be cleared. Didn't want to clear 60 feet if it wasn't necessary.

Q. Did he show which part of the right of way had 60 feet and which part had 40?

A. No, sir, he didn't show us.

Q. Well, did you go over the line from Clear Creek to Kilches River on that trip, that first trip?

A. Sam Down's to Clear Creek at that time.

Q. You didn't go from Kilches River to Clear Creek at that time?

A. No, sir, not at that time.

Q. How far is that?

A. I will give you the stations. 235 to 330.

Q. How far in miles, approximately, would that be?

A. Approximately two miles.

Q. In other words, you didn't go over two miles of that at all?

A. We didn't go—not over all of it, no, sir.

Q. Where did Mr. Cole tell you that you would be able to dump—beyond what point?

A. Told us that after we got across Kilches River, would be mostly side hill work from there.

Q. Beyond Kilches?

A. Beyond Kilches, that was all Whitney property, and we wouldn't have to be particular about it.

Q. He told you to do mostly dumping?

A. Said could cast up through there, mostly dumping. He did not say was all side hill, not to me.

Q. He said that was his opinion?

A. Yes, sir.

Q. Would be able to cast up there?

A. Yes, sir.

Q. Did you and he and Mr. Fobert—did you and he go over this profile map at that time and point out the cuts and fills beyond Kilches where you would be able to dump?

A. We had this profile along. We didn't go over it minutely, no.

Q. He made statements, as I understand from you that when you got beyond Kilches you would be able to do mostly dumping.

A. Yes, sir.

Q. Most of it will be able to do by dumping?

A. Yes, over the side.

Q. Now, were you on the job before the steam shovel arrived?

A. Yes.

Q. Now, when did you first know that the steam shovel was to be used at 17? Taken from the station, in other words, where it arrived, the railroad station, and taken to 17 for use?

A. Well, I first knew it probably a few days before the shovel arrived. I was right on the job. I knew.

Q. That is before the shovel arrived?

A. Before it arrived, I knew. I don't just remember the date exactly.

Q. Then the first move of the shovel from the railroad station at the time of arrival was to Station 17, wasn't it?

A. Yes, sir.

Q. Who told you that it was to be used at 17?

A. Mr. Cole.

Q. I believe you said a few moments ago that you remonstrated with him?

A. I did.

Q. And he said he was the engineer, and you must do as he wanted?

A. He said "I am the chief engineer on this job, and I want you to understand it."

Q. Could you have made the fill for the warehouse down there without the steam shovel?

A. Surely, we would have had to make it if we didn't go down.

Q. I don't speak of the necessity. I mean, if it was left to you the superintendent, the fill for the warehouse, would you have chosen hand or steam shovel?

A. Chosen team.

Q. You wouldn't have done it with a steam shovel then?

A. Not if I were in a hurry to get up beyond, no, sir.

Q. I didn't speak of hurry. Is that steam shovel work or hand work?

A. It isn't steam shovel work.

Q. Is it hand work?

A. Not hand work.

Q. I mean horses and cars, not steam shovel is what I mean.

A. Yes, it is good team work, as a matter of fact, and it could have been done cheaper.

Q. Why did you and Mr. Fobert and Mr. Cole reach the conclusion that you wished to get the steam shovel ahead?

A. Mr. Cole wanted to get ahead, and we were supposed to finish that work at a certain time, and we had to go ahead to do it.

Q. You said that Fobert was your superior there? You heard Mr. Fobert testify, didn't you?

A. Yes, sir.

Q. You heard Mr. Fobert say that the only reason for getting that steam shovel across the river before the raise was that they wanted to ford the river they couldn't do after the raise didn't, you?

A. I don't remember hearing him, but of course that was one idea. You had naturally to get up there; by keeping down in the flat you couldn't make it. That was one idea to cross the river ahead.

Q. That was one idea, and another idea, then, as I understand you, was that they wanted to hurry the work. What were you going to do on that down at 17, along in there?

A. Going to put teams in there and do it with teams, while working up ahead with a shovel outfit.

Q. When you were going to put teams in there?

A. Would put teams in there the same time. We had teams in there the same time doing part of that work.

Q. Were teams working in addition to the shovel?

A. Yes, teams working.

Q. And with teams and steam shovel working,

how long did it take you do that work you did from 17?

A. 25 days.

Q. How long would it have taken you with teams alone?

A. That I couldn't tell you exactly.

Q. Just your estimate?

A. Probably would have taken two months.

Q. To do that?

A. That depends on how many teams you would have. You see you could get teams and put them in there.

Q. With your outfit, how long would it have taken, with your teams you had on the job there?

A. It would have taken probably two months.

Q. Now, Mr. Glavin, didn't you expect there were to be changes in the alignment of this railroad from that profile?

A. Did I expect it? I didn't expect it. Might be.

Q. You didn't expect it. You thought it would be constructed exactly like that profile, is that it?

A. No, I didn't expect to construct exactly. I thought pretty close to that.

Q. Did you ever see the contract in this case?

A. Saw it once.

Q. Didn't your superiors inform you as to the terms of the contract?

A. Yes, sir.

Q. Did they inform you that there was a provision in the contract that the engineer of the Whit-

ney Company could make such changes as he saw best, or something to that effect?

A. No, sir, they didn't inform me.

Q. What?

A. They didn't inform me of that.

Q. Did you know anything of the right of the engineer to make changes?

A. I read the contract, yes.

Q. Then you knew that?

A. Yes, sir.

Q. But you didn't expect them to exercise that right, is that it?

A. I had absolutely nothing to do with what they would exercise.

Q. Yes, but you are telling the court what you planned to do, and they didn't do it like you planned it. I want to know if you planned on the basis that they were to stick right to the line?

A. Well, I thought approximately, you see. Not quite to the line, no.

Q. You didn't expect any changes to amount to anything?

A. Not like that, no.

Q. How far up the line was this road bed staked out with stakes in the ground?

A. Staked? At that time we were at Sam Down's. That is as far as I saw the stakes.

Q. That is the first trip up there?

A. Surely; I didn't go any further at that time.

Q. Now, if it wasn't staked out any further, by

an examination of it you couldn't tell very well where it was going to be, could you?

A. I didn't go any further at that time, you see.

Q. I know, but you were superintendent on the job, and I am asking you if you, as superintendent, could tell just where that railroad was to run when it wasn't staked out?

A. Couldn't tell exactly. You could tell pretty closely down there.

Q. How close? How many feet one way and the other?

A. Probably 30 or 40 feet you could tell down through there.

Q. In other words, it was a question of 30 or 40 feet one way or the other?

A. That is as near as I would be able to tell. I didn't go up through there at that particular time.

Q. But if you had gone up through there?

A. They had a line projected up through there. They had some stakes. They had a center line, through there at that time.

Q. Do you understand as a railroad construction superintendent that those stakes run up there beyond the point where they had a location meant that the road was to run right where these stakes are?

A. No, sir, I knew that it wouldn't have to do that. They could change it of course.

Q. Aside from the provisions in the contract, you know as a fact, and as a practical matter, that that doesn't mean that the road bed was to run right where those stakes are, don't you?

A. It doesn't have to. They can change it, of course.

Q. Do you know in locating a road that nobody ever built one and followed those stakes in there.

A. Depends on whether a preliminary location or permanent location.

Q. What was that, preliminary or permanent?

A. I think that was a paper location from Sam Down's up ahead.

Q. Preliminary location then?

A. Yes.

Q. You know, as a matter of fact, that is within your knowledge, no one ever did follow out these stakes exactly, in this case or in any other case?

A. In this case it showed by the quantity on the profile. It showed each cut and fill and quantity.

Q. I will come to that. I am talking about the alignment of this railroad. You didn't expect them to follow those stakes. You didn't expect those stakes to be the center line between the two tracks, did you?

A. Oh, no.

Q. What?

A. Certainly not.

Q. You knew that a change at 30 or 40 feet, if such were made, would not be unreasonable, didn't you?

A. You asked me if I could tell within 30 or 40 feet without any stakes?

Q. With stakes. If you had seen the stakes there, do you mean to say the road bed would have

to follow those stakes? That would be the center line.

A. Not necessarily, no.

Q. What deviation would you say would be reasonable?

A. On construction a fellow might see some betterment some way, or better the condition of the line.

Q. How far would you say would be a reasonable matter, as a practical problem?

A. Might want to eliminate some curve, reduce some grade, or something, make that a little better after he runs the permanent line and cross section; get the cross section. Might be able to determine that in better shape.

Q. Then you wish to tell the court that you knew, and anybody else would know that when they come down to the construction of that line there would probably be changes made, eliminating the curves and bettering the road.

A. The first time we were talking, Cole said that they would build a logging line and straighten up afterwards. The first operation was supposed to go through and build the line, get it built as quickly as possible.

Q. He told you they would go through it and straighten it up, as I understand; that line wasn't the final line?

A. Said would have to go up there if they could, when they were doing some hauling themselves; they could do some straightening on it.

Q. You mean after building the railroad?

A. He said could straighten up, could do it cheaper afterwards, straighten it up.

Q. I understood you to say he was going to go along and straighten it up, told you to straighten up the line you were to go by. Now where did you get your figures in determining what percentage of increase, and how many dollars of increase this work occasioned, the various extra works you have detailed to the court?

A. Took that off our daily distribution sheets. The actual time were in there working.

Q. Made an approximation on that. Have you got a memorandum with which you can refresh your memory on that?

A. I just took it off the daily report.

Q. Have you got those?

A. I have them, yes.

Q. Did you take that off your books?

A. Off our daily report. I can't state exactly.

Q. No, I am not trying to test the exact accuracy of the figures. What I want to know is how could you tell that there was an increase? Where did you get your starting point?

A. You mean an increase for overhaul?

Q. Yes.

A. Figure from your cars. I understand how to figure overhaul, you know. I can figure it out.

Q. Take the excavation. Overhaul is a little hard job. Take excavation. How do you know was increased?

A. Took our car check on a lot of that.

Q. How did you know how much excavation you were supposed to do?

A. Took it off our profile. That is the only way we had of telling at that time.

Q. Now, in making your excavation, for instance, did you follow the cross sections as laid out by the Whitney Company's engineers?

A. As near as I could, yes.

Q. And are you prepared to say that you excavated only the excavations as staked out by the Whitney Company?

A. Not on a neat line, no.

Q. Did you have any line, any instances in which you deviated further from the stakes than a ragged line would deviate from a neat line?

A. Yes, sir.

Q. Tell us about that.

A. There was an instance up about—

Q. State the station to the court.

A. Station about 290.

Q. Why did you excavate an excessive amount there?

A. To make the fills. They had changed the lines. The fills on the profile showed about 960 yards, and we put about 3,000 yards in it. We afterwards hauled back from up in front to widen this fill, and put it up to grade. It was still a little slack.

Q. Did they have the road bed staked out in accordance with that profile, as far as it was staked out?

A. At that time, yes.

Q. You say, then, that their stakes corresponded with this profile?

A. Well, I don't know that it corresponded exactly. They were putting in cross section stakes. Of course you can't tell whether corresponded with the profile, or not. Couldn't go up and tell that by looking at it. No one could.

Q. Didn't you keep any measurements?

A. The car records were all. Never got an estimate on the job at any time, showing how much yardage moved. Never had an estimate showing that.

Q. Do you mean to tell the court that you, as a superintendent would ask the people you were working for to give you an estimate of the work you were doing?

A. Customary on all railroad work, to get an estimate every month, of the quantity you have moved. Get an estimate every month.

Q. Didn't you keep that estimate?

A. Never got one there to keep.

Q. You moved it. Mr. Morris didn't do the moving. You did the moving yourself.

A. Just kept our car record. Checked by our car record, which isn't absolutely correct check on the measurements. Can't get that exactly.

Q. You mean you said, and gave the court all those figures when you didn't keep any records?

A. Took those off the final quantities.

Q. You didn't keep the figures then. You got them from us. You got our figures.

A. Figures off the final estimate, yes. Just took them off that. Our car record, of course, shows the amount of yardage moved, but that isn't always correct.

Q. How do you know that you were moving more material than you contemplated moving, if you didn't keep any records?

A. We kept our car records, I told you.

Q. Did you have an estimate by cars of how much you intended to move?

A. Got the estimates on the profile, and we could check our cars with it.

Q. How many times after you had your shovel at 17, having moved that from the railroad station to 17, how many times after that did you move your shovel backwards?

A. Move it backward?

Q. Backward. I don't care where.

A. Moved it back to Station 8 once.

Q. When was that?

A. In December.

Q. That was from where?

A. After we had gone up the line.

Q. You moved backward only once then?

A. Surely, just moved back one time to Station 8.

Q. The reason I am going into that, I have heard you say you moved back twice.

A. No, you didn't hear me say that twice.

Q. You moved back only once then?

A. Moved back from Station 231. Moved back once to Station 8.

Q. That is the only time while you were on the job that the shovel was moved back from where you were working?

MR. DOBSON: He didn't mean that.

A. I mean we moved back from Station 231 to 8 west; where we dug at some other cut, moved ahead at the first lift, then moved back and dug at the second lift. Cannot do any other way.

Q. I am not referring to that.

A. Just the one time.

Q. You moved back once?

A. Yes, sir.

Q. That was the time that you moved back for the purpose of raising the grade between approximately 200—

A. Approximately 107.

Q. Up to approximately 122.

A. Yes, sir; 126.

Q. In what condition was that road bed between 107 and 122—or rather what condition would that road bed have been in if you had allowed it to stand under water for three or four weeks?

A. They had it corduroyed and checked up, would hold the track up.

Q. What condition would it have been in if you left it as it was? If you left it without going back at that time?

A. Of course wouldn't be in good condition.

Wasn't when we went back, in fact. Was under water.

Q. Do you or don't you see the justification in Mr. Norris' requesting that you people go back and fix up that road between 107 and 122.

A. I can see his justification in it, you bet.

Q. That is, that by leaving it under water, the road bed is bound to deteriorate, isn't it?

A. Yes, nevertheless it kept us from going on up the line.

Q. I understand that. That delayed you. You wanted to go ahead. I am asking you now if the road bed wouldn't have deteriorated by being left in the condition it was?

A. Yes, it would.

Q. Now, Mr. Glavin, suppose you had followed out there the way Mr. Cole told you, and beyond Kilches dumped most of the material. That is what he told you he thought you could do. Could by that method a road bed been built that would have been usable?

A. Yes, sir.

Q. In doing that then, if you had dumped and he had let you run it and dumped, you say you could have built a road bed that would have been usable?

A. As a logging road, yes.

Q. Now, you speak of extra work that you did costing you so much more that it would have. For instance, moving that shovel back—I mean to take the shovel from the station to 17 instead of taking it on up to Cemetery cut, where you wanted to start.

You told the court that cost you so many thousand dollars to move it, and cost you so many thousand dollars to build the track, etc. The Whitney Company were paying you for all that, weren't they?

A. Absolutely, yes, sir.

Q. They were giving you a percentage?

A. Yes, sir.

Q. Above the payroll, weren't they?

A. Yes, sir.

Q. You did cast some up above Kilches, didn't you?

A. Why, I was there very, very little.

Q. Sir?

A. Not while I was there over two or three—

Q. You were not there very long after they passed the Kilches River?

A. Left there in June. I think they did some casting but not while I was there to speak of.

Q. Then you don't know whether or not Mr. Cole's statement that he thought you could cast mostly above the Kilchis was carried out or not, do you?

A. No, sir, I don't know.

Q. Well, did you detail anything to the court there that you didn't know while you were personally on the job?

A. No, sir.

MR. DOBSON: I didn't take him beyond station 448.

A. I was beyond the Kilchis River.

Q. But anything you told the court, you knew of your personal knowledge; you were there?

A. I was there on that.

Q. How do you know that there were stakes beyond that part of the road bed that was located?

MR. DOBSON: He didn't say that he did.

MR. FREED: He said was staked out and I ask him.

A. I said as far as Sam Down's; I was that far and it was staked out.

Q. Beyond Sam Down's I am asking you now.

A. I was up above Sam Down's lots of times on the work when we were there; they had stakes in it.

Q. That is the part in which you said that it is known that they are not going to place the alignment just exactly along those stakes; you didn't expect that?

A. I didn't know what they were going to do.

Q. Now, you told the court that you were held up down in mile A or Mile 1 by Mr. Woods who had the clearing contract, didn't you?

A. Yes.

Q. He fell down on the job I believe you said.

A. Yes, he did.

Q. Who let that contract to Mr. Woods?

A. Mr. Cole is the fellow who let the contract. Mr. Cole and myself were down there together. Mr. Cole brought him down, a particular friend of his, and let him the contract.

Q. Who was, Mr. Wood?

A. Mr. Cole; I had never seen the gentleman before.

Q. With whom was the contract between, Mr. Wood and yourself, or Mr. Wood and the Whitney Company?

A. Mr. Wood and the Rajotte-Winters Company, but was supervised by the chief engineer because he had to sign the contract, and he signed the contract; I signed it with him.

MR. DOBSON: The contract provides that all sub-contracts must be approved and accepted by the defendant company.

Q. That is all right, but is this the contract?

A. This is the contract, yes, sir.

Q. Was there any assistance on the part of the chief engineer that you accept Mr. Wood as the sub-contractor thereon?

A. Absolutely not. That was to help things out, to get that done, that is the idea. He said—

Q. Then do I understand that you are blaming the Whitney Company and their chief engineer because this subcontractor fell down on his clearing.

A. I am not blaming. Just shows we had a little delay there.

Q. I understand that, but are you saying that they were responsible for that delay?

A. Certainly not; they are not responsible; the fellow fell down on the job.

Q. Then if the complaint asks for any damages because of that delay, you don't think that is very just?

MR. FREED: I would like to offer this contract in evidence.

MR. DOBSON: For what purpose?

MR. FREED: To show whose subcontractor Mr. Woods was; we are blamed for his acts.

MR. DOBSON: No objection if that was the purpose.

MARKED DEFENDANT'S EXHIBIT A.

Q. Now, in regard to that move that we spoke of, the only move backward that was made, from two hundred and thirty-one or thereabouts back to eight, I think you said, west?

A. Approximately, yes.

Q. I think you said, didn't you, that you didn't hear any conversation that might have taken place between Mr. Norris and Mr. Rajotte in reference to that?

A. You asked me before we moved back.

Q. Yes, before the move was made.

A. No, I did not.

Q. If there was any objection made before the move, you don't know about it?

A. By Mr. Rajotte, I don't remember.

Q. That is, you personally didn't know it?

A. No, sir, after we were on the job, moved back, I remember.

Q. Now, you spoke of using steam shovel back at near the warehouse, I think, on that move back from 231, didn't you?

A. Yes.

Q. Had you used the steam shovel about the same place when you originally placed it at seventeen?

A. Not the same place; we went in a different borrow pit altogether.

Q. Right in near there, wasn't it?

A. Well, it is probably eight or nine hundred feet.

COURT: Where is the warehouse you speak of?

A. The warehouse is about station one or two west, or about station eight west.

COURT: When the steam shovel was located the first time, after it arrived over the railroad, it was located at seventeen, wasn't it?

A. Approximately seventeen west, yes.

COURT: What was the purpose of locating it there?

A. To make this fill and interchange track and do that work in there.

COURT: Did that include the warehouse foundation?

A. No, sir, not to include the warehouse. They later figured on putting up a warehouse there. We did some filling around it for the ground where the warehouse was going just for the tracks.

COURT: That was the first time?

A. That was the first time, yes.

COURT: Did you do any filling there when there the second time?

A. The second time were there put in for the ma-

chine shop and some additional filling around the warehouse.

COURT: The same locality?

A. Right in the same locality; right in the same ground practically; just widened it out and put a machine shop.

Q. Did that profile show what was to be casting and what was to be removed by any other method?

A. No, sir, it doesn't show how we are to move it.

Q. If the road bed had been built according to that profile, you could have cast just as you say Mr. Cole told you?

A. You couldn't have cast it all, no. There are some thorough cuts where you couldn't cast it.

Q. What I am referring to, is you said Mr. Cole told you you could cast certain parts, which you later did not cast. Now, I am asking you if that profile showed to you that you could cast any parts that you were not allowed to cast?

A. That doesn't show that.

Q. The profile doesn't show what method you could use, does it?

A. Absolutely not. That doesn't show what you could do on that particular site. Shows the work, side or thorough cuts, and if he is willing to let you do that, you can.

Q. When were these conversations with Mr. Cole, before or after the contract was signed?

A. I am not sure the contract was signed the day we went down there or not.

Q. It was signed June 21st.

A. The day we first went over the line was along about that time. I am not sure whether the contract—

MR. DOBSON: He doesn't know whether the contract signed or not.

A. It was just about that time the first time I was down; I know about the time it was signed; I am not sure whether signed before or after; I couldn't say as to that.

Q. At any rate, this profile wouldn't show about the casting. Mr. Cole's statement is what showed you about it?

A. He said when we got up there on his own land, later on, were to expedite the work and rush things.

Q. But that profile doesn't show that?

A. Doesn't show you do that at all.

COURT: Were the lines staked out along where Cole said you could cast?

A. Staked out part of the way, Your Honor.

COURT: Did you follow along the staked-out line?

A. Yes.

COURT: Right up through there and examine it?

A. Yes.

COURT: Could you tell yourself whether you could cast or not?

A. Yes, could tell by going over the line, the side work; we were able to tell it and determine what we could cast. Sometimes they would allow you to

cast some more and widen it a little bit; you can cast; I will show you how we could have done some of this.

COURT: Who prohibited you from doing the work that way?

A. The chief engineer made them stick strictly to the way the line was made out and haul it, and make really a better line. The line was a little better than first contemplated, than Mr. Cole contemplated. He was going to allow us to go along and cast.

COURT: The reason you didn't cast was you weren't allowed to cast?

A. Better line; they held us more to the way it was laid out, you see. Of course, that took longer, and a little more time—it took longer and a little more money to build.

COURT: Do I understand you to mean, now, that while you contracted to build according to this detail, I mean this profile, that you didn't intend to do the work that way?

A. We intended—

COURT: Because the company required you to do it as you agreed to do it?

A. We agreed to go up through there the way he said we could cast a lot of that material, and expedite the time of the work and keep going, and since that it was just a haul; made a cut and fill proposition, and all haul and really a better line built than we first contemplated.

COURT: A better line than the one called for by the profile?

COURT: That was because of the change then?

A. Yes, some changes, material clearing, widening out, eliminating some curves and reducing some grades.

MR. DOBSON: As a matter of fact, the profile indicates that along the route, doesn't it?

COURT: What I want to know, is why he didn't cast; who prevented him from casting? He is claiming, as I understand he couldn't dump the dirt over the side down the hill, but had to move it some other way. I want to know who is responsible for that?

A. The chief engineer is responsible for not letting you do that.

COURT: Did he prohibit you from doing that so you couldn't do it?

A. Yes, sir, he figured it made increase of quantity that way.

Q. What was his reason? I didn't get that.

A. I presume afraid it would increase the quantity.

Q. He thought that would be cheaper that way, is that it; the way he required you to do it?

A. Mr. Cole's idea was it would be considerable cheaper to cast than haul; figured it would be much cheaper but would make a more ragged line, and not as well finished roadbed or as good a railroad.

Q. As I understand it, you say if you had built the roadbed just exactly in accordance with this profile, you could not have cast all of that material Mr. Cole told you you could?

A. No, sir.

Q. Sir?

A. You could not.

Q. In other words, then, if you had built it just according to this profile and according to the specifications in your contract, you could not have cast very much of that.

A. Couldn't have cast it, no.

Q. Couldn't have cast it all?

A. No, sir.

Q. You couldn't have cast very much of it?

A. Could have cast quite a lot of it to the side, yes.

Q. But there is a good deal of it that you gathered from Cole's information, you wouldn't have to cast, which later he made a casting there—which by this profile is called for casting—not on the profile, but I mean if you followed out the profile would have had a casting?

A. Could have cast it.

Q. Then you mean to tell the court, if you had followed out this profile and followed out the specifications in the contract, that really you could not have cast a good deal of this stuff you are complaining about now, that he didn't let you cast?

A. Lot of it you could have cast that we didn't cast, quite a lot of it.

Q. I understand that, but a lot of this was—

A. Some thorough cuts, you know—you really can't cast thorough cut, you understand.

Q. Your complaint on these points is that Cole

held you to this profile; that is what I understand, isn't it?

A. Well run these lines and took up a lot more of our time.

Q. If he hadn't held you—if Cole and Mr. Norris later hadn't held you to the specifications you could have gotten along much more rapidly?

A. Could have got up there quite a lot more rapidly.

Q. If you had adhered absolutely to this profile, all the way through, could you have, with the force of men that you had on the job, and the system you were employing, have finished this railroad by January 1st, 1920? What is your opinion of it?

A. My actual opinion is, I don't think we could have.

Q. You couldn't have, could you?

A. No, sir.

Q. When do you think you could have; opinion only, I understand.

A. I couldn't say as to that, when we could have finished.

Q. How much longer?

A. I think within two or three months.

Q. It would have been two or three months longer?

A. Yes, sir.

Q. In other words, by your own estimate, you would have been thrown into the winter on a good part of this work, which you did the next spring of 1920?

A. The rains started in the fall in October the year that we were there; very wet.

Q. You knew you had to do the work in October weather?

A. Yes, I say this was very wet.

Q. You couldn't have possibly finished it under your system and with your men by January 1st, 1920, you say?

A. Not with the same force by cutting and hauling it, no.

Q. In other words, then, it would have taken you, if you followed those plans strictly, the month of January and February, making your minimum of two months, in addition to the time that you actually planned?

A. By doing it just the way it was here strictly by the profile.

Q. And therefore you would have been thrown into the winter?

A. Yes, sir.

Q. Anyway, you would have had several wet months?

A. Very wet.

Q. And even if you hadn't been delayed down there at 1, or at 17, you still would have been thrown away into the winter, wouldn't you?

A. We lost practically three months of our time down there.

Q. You would have been thrown into the winter anyway?

A. Surely.

Q. You did a lot of this work the next summer of 1920, didn't you?

A. Yes, sir.

Recess until 2 o'clock p. m.

Thursday, October 25, 1923, 2 p. m.

MATT GLAVIN resumes the stand.

CROSS EXAMINATION continued.

Questions by Mr. Freed: Mr. Glavin, what were you paid, what was your interest, I mean to say in this work? Did you get a salary only?

A. No, sir; I was to get a percentage at the wind-up, if they made anything on the completion of the job.

Q. Just explain that a little more fully, please—what you mean by getting a percentage.

A. On the contract there was a lot of work for the superintendent; the way they pay, they say salary and percentage, so if you get the work done more cheaply—have an interest in the work and get along better.

COURT: Percentage on what the contractors earn under the contract?

A. Just what they would earn, yes, sir; 10 per cent of that on the windup of the job.

Q. Were any other employees to get a percentage like that, were promised a percentage like that?

A. No, sir.

Q. Just you?

A. That is all I know.

Q. Did you get anything?

A. No, sir.

Q. You just got your salary. Did you ever superintend the construction of a logging road.

A. No, sir; not a logging road.

Q. This was the first logging road that you ever——

A. First logging road, yes.

Q. The first job of that kind you ever built?

A. Logging road, not railroad. Been on lots of standard gauge railroad.

Q. But logging road?

A. Logging road, yes.

Q. You never had experience of just this kind before?

A. The same experience on standard railroad, Northern Pacific, Great Northern, building standard gauge line.

Q. Did you ever build a railroad in which you dumped the materials just as you say Mr. Cole and you and Mr. Fobert expected you could do?

A. We had part of the line at Kettle Valley in Canada that we did that on three miles of the work that was side hill.

Q. I am not going to trouble you to go back over very much ground, but want to straighten out one matter here. I believe you said you did not go over very much ground on this first visit down to the scene——

A. No, sir——

Q. Just a minute. From the Kilches River to Clear Creek?

A. Not all of it; no, sir.

Q. Will you turn to that on the profile and show the Court what we are talking about out at Kilches.

A. Here is Kilches River.

COURT: What station is that?

A. 220 - 221. We came up around here over east, and went to Sam Down's and came back, walked back from Sam Down's to Clear Creek, but we didn't go over from here to Clear Creek on that first time over.

Q. How far is that?

A. Approximately a mile and a quarter, eight stations, eight thousand feet.

Q. And about five stations to the mile, not quite a mile and a half?

A. Not quite.

Q. You said that as far as that part of the road bed was concerned, you were in Mr. Cole's automobile along the highway; that is, you skipped from Kilches over to Clear Creek in Mr. Cole's automobile, didn't you?

A. Went from Kilches up to Sam Down's walking and came down the line from Sam Down's to Clear Creek.

Q. Yes, but from Kilches to Clear Creek you passed over that?

A. We didn't walk over the line.

Q. You passed over that in Mr. Cole's automobile, that is, you passed by that?

A. Passed by on the road, yes.

Q. Isn't it a fact that the road is on the opposite side of the river from this road?

A. Yes.

Q. So as far as that part of the road bed is concerned, from Kilches to Clear Creek, your sole view of it on this trip that you spoke of was from the opposite side of the river?

A. Yes, from Kilches to Clear Creek.

Q. How far would you say this highway along which you were traveling was from the alignment, approximate line of the road?

A. Some places five or six hundred feet, I think some places a little more than that, where the road runs away from the river.

Q. Five or six hundred feet, and some places a little more.

A. Yes, sir.

Q. In other words, you were traveling along the highway—here was the river, there was the alignment you understood the roadbed to take. That was from five to six hundred feet, varying into a greater number of feet?

A. Yes, sir.

Q. And is it, you say, in that part of the roadbed that Mr. Cole told you would be able to dump, do a lot of dumping, wasn't it?

A. From there and up from the end to over the projected line along the line where we could go along from there up.

Q. That was one of the main places where you would be able to dump?

A. Yes, sir.

Q. At which you were looking from the highway across the river?

A. Yes.

Q. You really didn't see any of that, did you? Could you see any part of it?

A. No, sir; we couldn't.

Q. What was in the way?

A. Timber.

Q. How much of it would you say—how much of that mile and a third—I think it figures about a mile and a third, or a mile and a quarter—of that stretch could you see, do you think. I am not asking you to be accurate.

A. I could see probably—could see about 3,000 feet.

Q. You could see a little more than a third of it?

A. About 3,000 feet, I think approximately.

Q. And 8,000 feet would be the total. That was one of the places where the dumping could be done, and the other place that Mr. Cole spoke of was beyond where you went. You said you went on up to beyond Clear Clear in an automobile. Then you got out, as I understand it, and came back to Clear Creek.

A. Went across the river.

Q. What was the extremity to which you went? How far up? Just the station.

A. 390, I think. Just the other side of Sam Down's, where you cross the creek.

Q. The other places Mr. Cole spoke of being a dumping job was beyond 390?

A. He said that was the projected line and could

look through there when we got to it, right around the contour of the hill.

Q. You didn't go up there?

A. No, sir; I did not.

Q. You didn't look at that?

A. I didn't look at that.

Q. And Mr. Fobert didn't on that trip?

A. Mr. Fobert was with me on the trip. He did not.

Q. But you just took Mr. Cole's statement for it that up there would be a dumping ground?

A. Yes, on the projected line. Said to go up there and around the side hill; get it done as quickly as possible.

Q. You knew the line hadn't been staked out up there?

A. Knew it had been projected; from his remarks was a projected line.

Q. Tell us what you mean by projected line?

A. Paper location; just went up there on preliminary location, and he had a map which showed very closely. I don't know how he got it so closely. As a matter of fact, your Honor, not an engineer or contractor can take one of these profiles and tell you from the profile how you can do the work absolutely. That is impossible. Can't take an engineer, any engineer in this city, or contractor who can tell you just how to do the work from looking at a profile, of course. Mr. Cole, the engineer that projected that line said when you got to Sam Down's Creek to

ignore some of these lines and make cast just as quickly as possible, and after it was run they could afterwards fix that up with their own trains, haul some material back and line it up. That was the understanding at the time I had with Mr. Cole—Mr. Cole's sanction.

Q. Well, Mr. Norris didn't stick to that but made you adhere more closely to this profile?

A. Yes, sir; I didn't finish that work up there.

Q. And this is the profile that was submitted to Mr. Rajotte when he entered into the contract?

A. Yes, sir.

Q. Will you please turn to that profile to Station 237. Have you that?

A. Yes, sir.

Q. Now, you tell the Court that in order to make the fill between Station 237 and 248 that you found after you got up there that you had to make a borrow pit at Station 250 to haul the material from 250 to 237—to the space between 237 and 248.

A. Yes, sir.

Q. That you hadn't contemplated that. You thought that you could pick up that material to fill between 237 and 248 along the side of the bed. That is correct, isn't it?

A. That was the understanding first that we could do.

Q. Yes, I want to be sure all of us understand what you said.

A. But remember it wasn't the way I saw the profile.

Q. I know, but that is what you understood was to be done.

A. Yes, that is the idea.

Q. And your complaint was that that wasn't done. That we made you go to 250—that is, you had to—as a matter of fact had to go to 250 and make a borrow pit and haul the dirt back?

A. Yes.

Q. You said one reason for that was that the right of way along there was not broad enough?

A. That is what Mr. Cole said. He first said to take out with teams. As a matter of fact, the profile showed borrow at this station, and he said to go in ahead of it and take out with teams at the side, but finally said was not wide enough right of way.

Q. When did he say go with teams?

A. When fencing down below. In September said could go up and get across above the highway.

Q. When did you do this borrow at 25?

A. In September.

Q. In other words, he told you in September, and you did the work in September?

A. We did the work, I think, in February.

Q. As I understand it, you expected a right of way there? You didn't have enough right of way. You couldn't dig from the sides. That is the fact, isn't it? I mean, that is your contention?

A. Yes, sir.

Q. You said this morning also that you had understood—I believe I am correct—that you understood the right of way was from 40 to 60 feet?

A. That is what I understood, some places 40 and 60.

Q. You worked on that basis, at any rate? Now, do you know how wide the right of way was between Station 237 and 248?

A. No, sir; I do not.

Q. Do you know that it was less than 60 feet?

A. I don't know what it was. The understanding I had with them was that they had just made a deal with the farmer there to just put a fill in and not take any more of his land than necessary.

Q. Can you look, or refresh yourself from any paper, and tell the Court how broad the right of way was that you had to work from there?

A. No, sir; I can't tell how wide it was. They put the fill in there; nothing but just slope stakes where they put the fill in. I don't know how wide the right of way was at that time.

Q. For all you know, the right of way might have been 60 feet?

A. Absolutely. Might have been a hundred. I am not sure of that. I am not sure on that part of it.

Q. Why didn't you dig the dirt from the sides?

A. He told us he didn't have the right of way.

Q. Then I am asking you—he told you he didn't have the right of way to do it, but did he tell you he didn't have 60 feet right of way?

A. No, no; didn't tell me how much; just said wouldn't be wide enough on the right of way to take out a borrow pit on each side and leave a berm along the fill.

Q. So we will get it in the record; doesn't this profile show that between 237 and 248 there was a big fill?

A. Yes, shows six thousand yard fill from Station 237 to 248—249.

Q. It shows a fill?

A. Yes.

Q. You were not surprised to find a fill there?

A. No, sir; I saw a fill there.

Q. Yes, you saw it and the profile shows it. Doesn't this profile show they were to borrow the dirt to fill at 250?

A. Shows borrow right here.

Q. Doesn't it show further that that was to be brought back?

MR. DOBSON: Get it in the record what station.

A. 250.

Q. Shows at 250?

A. Yes, 250.

Q. Doesn't it show that the borrow which was to be made at 250 was to be brought back for the purpose of making this fill?

A. Absolutely it shows that. Shows on the profile; he was going to have this changed. In expediting this work, going here, to start here and cast that. This shows just how it takes. If you get me, this

don't show here; I didn't say that. The arrangement was to move the teams up into that, finish down there, and get this done, so we come across, go on up the line. Mr. Cole's idea was to get up as quickly as possible. He meant to co-operate and do everything he could get up.

Q. Now, in that part of the complaint which your company has filed here, in reference to requiring you to borrow from 250 and haul the thirteen hundred yards, or so back to make the fill, that was shown on that profile map?

A. Absolutely was shown right here.

Q. And when Mr. Rajotte put his name, or the name of his company to that contract, he should have known that it was required, shouldn't he?

A. It was here.

REDIRECT EXAMINATION.

Questions by Mr. Dobson: Mr. Glavin, Mr. Freed asked you something about the fact that you had a percentage on this work. Just what did you understand by that? How were you going to gain by that?

A. Going to gain?

Q. Yes, how were you going to gain by the fact that you had a percentage on the work? What was it incentive for you to do?

A. We were to go along as fast as possible, and when they finished the work up, whatever they made on the finish, I was to make something out of it, a percentage, 10 per cent.

Q. Did you understand the reason you had a per-

centage you were to add as much to the cost of this work as possible?

A. No, sir; if we finished at a certain time, we were to get more.

Q. Was that what you had in mind?

A. Yes.

Q. That is what you were endeavoring to do?

A. Absolutely. Wasn't figuring on carrying the job on at all.

Q. In cross examination, Mr. Freed referred to the fact there was only one move back with the steam shovel plant, when you referred to the fact there had been two moves back. Just what did you mean on direct examination? You brought out the fact that the steam shovel plant was moved back on two occasions.

A. Moved back?

Q. Yes.

A. Moved back from 231 once, then moved down from the Southern Pacific once, the first time. That was the original move.

Q. That is what you referred to when you said two moves back?

A. If I did, I didn't mean it that way.

Q. As a matter of fact that was a move back?

A. Wasn't what you call a move back, because it had gone down from the S. P. station down to Idaville.

Q. Well, for instance, your original plan was to send the steam shovel ahead?

Q. Yes.

Q. Move forward, instead of that moving back?

A. Move forward. We hadn't gone ahead at that time.

Q. That is what you referred to, or what you meant when you referred to the fact there was a second move, or two moves.

MR. DOBSON: I may want to recall this witness later in the case, if there is no objection, but that will be all at this time.

Witness excused.

A. FOBERT—Recalled by the plaintiff, having been previously sworn, testified as follows.

DIRECT EXAMINATION.

Questions by Mr. Dobson: Mr. Fobert, you have been on the stand once before in this case?

A. Yes, sir.

Q. And I want to ask you now when you went back to this work after your first visit down there, when you made the—assisted Mr. Glavin in making plans and preparation for carrying on the work, when did you next go back to the work?

A. I couldn't tell the exact date. Went down there when the shovels were working.

COURT: What?

A. When I went down the second time the steam shovels were at work.

COURT: Where was it, do you know?

A. Station 17.

Q. That was just a casual trip, was it not?

A. Yes.

Q. You didn't go down there at that time with the intention of staying?

A. No.

Q. What I refer to is the time you went back to this work for the purpose of taking charge and staying there or assisting Mr. Glavin, or whoever was in charge of the work?

A. You mean when I went back to stay there?

Q. Yes.

A. January 17, I am in charge. That is when it was. I think January 17. I may be off a month there.

Q. That was the early part of 1920 or the latter part of 1919, is that what you mean? It was during the winter time, was it?

A. Yes, 1920.

Q. Now, Mr. Fobert, can you take the profile and point out to the Court just about where the steam shovel was at that time?

A. About Station 282.

Q. About 282?

COURT: How far is that from the crossing of the river, that is at 231?

A. About 4,000 feet.

COURT: Had the work been done from the river up to where you found the shovel?

A. Yes.

COURT: It had been done when you went back? What time did you say you went back?

A. I may be a month off. Either January or February 17.

COURT: Some one testified that the shovel remained down at Station 8 until January.

MR. DOBSON: We will establish that time. Mr. Martin, can you give it when Mr. Fobert went there and took charge of the work? Look it up and we will put it in the record.

MR. MARTIN: About the first of February, I think.

MR. DOBSON: We will get the correct date.

Q. Now, from the time you went up there, I wish you would tell the Court in your own way just what changes were made in the line, starting in for instance at the point where the steam shovel was when you went up there, and just go right along on the profile and point out to the Court the changes that were made by the defendant in the construction of that line—that is, different from the profile.

A. Change was made about Station 334 along there. I couldn't give you the exact point. That change was made from about there. The grade was straightened to throw it up the hill. It made a bigger and a longer cut.

Q. Just mention the particular cuts, and give the station numbers; that will save time.

A. You want me to give the length of the cut?

Q. Just state about the points where the changes were made.

A. Change was made at this station here, about 332, along in there, and made to make a better bridge, and straighter or better roadbed; bigger cut instead

of making a short—we had a short—that is the profile shows here a thorough cut a little way, and shows more side work, but this change made it almost all thorough cut. That is thorough cut about—around twelve to thirteen hundred feet cut. Maybe a hundred off, fifty, something like that.

COURT: What is the cut shown on the profile?

A. The profile shows about ten or eleven foot cut, highest point.

COURT: You say you changed the cut to thirteen hundred feet long?

A. When they made the change, made a bigger cut, deeper and longer.

COURT: How much longer did it make?

A. This first cut here, the way this profile shows is about four hundred feet thorough cut, and the change made it about thirteen hundred feet and deeper cut.

Q. Mr. Fobert, while we were on that, were you there? Were you in charge of the steam shovel when that work was done?

A. When the change was made?

Q. When you did this work you were there, were you not?

A. When they made the change?

COURT: When the work was done?

A. I wasn't there when the change was made here.

Q. I mean were you there when the work was done?

A. When the work was done in the thorough cut.

Q. And you knew about the increased length of the cut?

A. Yes.

Q. Just state to the Court whether the increase in yardage was considerable, or was comparatively small?

A. It increased the yardage a whole lot. Must increase the yardage in that thorough cut as near as I can tell you, eight or ten thousand yards along there more. I may be off there a hundred yards either way.

Q. You kept no record yourself?

A. Kept no record.

Q. Anything else that occurred right in there?? Just talk about this for the time being. Was there any other thing done in here by the defendant, or its engineers? You know what I mean by engineers of defendant—to indicate that they changed the line at grade?

A. They changed—they put that through where the change was made. They made the work right there where the change was made.

Q. What I want you to tell the Court now—we realize the fact that they changed the grade and you made a longer cut? Did they do anything else in there?

A. I don't understand your question.

Q. You say the profile shows originally the road-

bed ran up here. Now, you say they straightened it out, and put it down here, somewhere about Station 350. At that point you say they lowered the roadbed, or lowered the grade in some way. Is that correct?

A. I couldn't tell you about laying the grade. Had a new location altogether, thrown up the hill. When thrown up the hill, it made a bigger cut. Whether lowered the grade or not, I don't know. I wasn't there.

Q. Did they set any stakes at this point, showing the center line that you were to follow?

A. Run center line, clear the right of way and stakes across that.

Q. When you went in to do this work, were there any stakes upthere to show where your center line was?

COURT: Did you trace out the original line as staked out by the engineer?

A. Yes, sir.

COURT: And did you trace out the new line as you say staked by the engineer?

A. Yes, your Honor.

COURT: How far apart were the marks?

A. In about the middle of this cut the right of way didn't connect with the right of way. We had cleared the first location.

Q. How far apart were the two lines? About, approximately, how many feet?

A. I couldn't tell you exactly how many.

COURT: I don't suppose you could exactly.

Maybe somebody else can. Twenty feet, thirty feet, fifty?

A. The right of way through there was around sixty feet, as near as my knowledge, and it was clear off. That is, about thirty feet, thirty or forty feet up the hill farther from the right of way. Didn't connect with the other right of way, not the middle part of that cut at all.

COURT: That is where the line was staked out?

A. Yes, sir.

COURT: That will be about sixty feet.

A. Your Honor, we had a right of way cleared at that point where we made the change, and then had to do new right of way altogether. The right of way we already had cleared wasn't any good at all. We had to clear a new one.

MR. DOBSON: Did he make that clear to your Honor?

COURT: No.

Q. The point the Court wants to know——

COURT: He said he placed the original line as staked out by the engineer, where they put in the engineer's stakes—the engineers put in the stakes?

A. Yes.

COURT: Then you traced the new line as staked by the engineer.

A. Yes.

Q. I want to know how far these two lines of stakes were apart, about how many feet?

A. Your Honor, where they first started that

change they were together, and kept swinging away from it.

COURT: How much was the widest point?

A. The farthest point from center to center, must have been a hundred feet, a good hundred feet.

COURT: How long was the change? That is, how far was it from where the change began to where the new survey came back into the old line.

A. This bridge here had a curve in.

COURT: How many feet?

A. About seventeen hundred feet where they came into the old line.

COURT: About seventeen hundred feet. Between what stations were these?

A. Station 332 to Station 349, down there. It may be off a few feet. I didn't check up.

Q. Now, you were on this work at what time, as near as you can remember?

A. I had charge of this——

COURT: That change is not mentioned in the complaint at all, is it?

MR. FREED: No, sir; it is not; I can't find it, and your Honor understood that we object to the introduction of all points not mentioned.

COURT: Yes, I understand that.

Q. Mr. Fobert, do you remember about what time you arrived at this particular part of the work?

A. At the plant, do you mean?

Q. Yes.

A. No, I haven't got the time, haven't got the date.

Q. Just go ahead and explain the next point where you had to do more extra building because the line was changed?

A. From Station 365 along there. I may be off a few hundred feet either way; 365 up to Station 375 was changed again.

Q. Just explain to the Court what the changes were, and how do you know they were made.

A. I already had—I had some men working grade, at the grade over here when they made the change; was a little bit of side hill out there, and when they made the change they cut that out altogether. Just a little bit of it, not much—that part didn't change the work very much; changed it some, but not very much.

Q. That is, you mean to say, that at the time they changed the line you had already completed it?

A. No, sir.

Q. I mean you had done some work there. You had done some work at this point?

A. I was working where they changed it. That is where the change came in right where the men were working.

Q. Had the men done any work at the time they made the change?

A. We had done work, but what work we done was all right. The change didn't destroy the work any because just about started on the line.

Q. What change did they make there that caused you to do more work?

Q. At Station 430, along there there was—I may

be a few hundred feet off there, but there was some change made.

Q. Now, you say you may be off a few hundred feet?

A. I may be off more than that. I didn't check.

Q. Can't you identify it a little better?

A. I could identify it by this cut here, your Honor.

Q. Were there any changes about where these cuts were made on the map?

A. This cut was figured here, and this cut over here, where it shows a cut was no cut at all.

COURT: What station is that?

A. Station 434 plus.

COURT: 434 to what?

A. There was some change in the way there. I couldn't tell you.

Q. And you were there practically every day, were you?

A. There all the time, every day and all day.

Q. And you know that there was some increased work?

A. Yes, sir.

Q. That is, you had extra work to do because you had to go in these cuts, and put your dinky cars in there and haul material out?

A. Yes, sir.

Q. What the Court is interested in here is to find out how many of these changes were made, and whether that was due to the fact that they changed the line of the roadbed, that is to say, changed the

center line up or down, or one way or another. That is what we want to find out here.

A. This line was changed up the hill all along from station—along station 430, along there.

Q. How far did that continue?

A. It went up about station 446—five or six, I think along there. There was some straightening done there, better roadbed. Straightened the line up in the heavy hill, heavy cut.

Q. Now, what you said, as I understand, and I think the Court understands, there are three things, or at least two things that would indicate they changed the grade. In other words, that showed they changed the grade. One would be that you had to make thorough cuts. You know what I mean by thorough cuts. Another thing would indicate they made the change, would be the manner in which they had their stakes set. As I understand they originally, when this line was located, they set the stakes along a line showing where the line should be constructed?

A. Yes.

Q. Now, if they departed from that, or changed that, they would set those stakes at some other point. What the Court would like to find out, and what I want to know, is how many places they did that, or you say that was done?

A. At this certain place over here they needed material. This cut was taken out by hand and after the cut was taken out by hand they were short of material for fill, and I got that shovel and I put the

shovel at this point and widened this point to get material to finish that dump back. The dump was not wide enough.

Q. Was that due to some change they had made in the roadbed?

A. Yes, sir.

Q. What was that change?

A. They changed to make a better roadbed.

Q. In what way? Was that because they moved the roadbed to the right or left?

A. They moved it up the hill; they couldn't go down any lower.

Q. The point is, did they do it? That is what I want to get at. Did they move up the hill?

A. They moved up the hill.

Q. And that was the change you referred to?

A. Yes, sir.

Q. Where was that you say? At what station?

A. This at station—between station about 430, along there, up to 446, along there.

Q. Now, that takes in how many cuts there?

A. One, two, three, this shows a cut here; they changed; another cut where change was made.

Q. They eliminated one cut?

A. This actually shows up higher than this one. That is one, two, three, thirteen foot cut here. And this grade, what they now changed. Only shows grade at top of cut, and this cut is bigger, and the next one is bigger.

Q. They made a change in such a way that they moved the roadbed up the hill at this first cut. This

cut at about station 431, is it not? Now, did they do anything else there, which shows you that they changed the grade of the roadbed?

A. They made a fill; the fill was bigger. The cut was bigger.

Q. How would the fact that the fill was greater indicate that they changed the roadbed, changed the alignment?

A. How would it show?

Q. Yes, how would that show? You said that the fill was greater here—that was one of the things. How would the fact that this fill was greater show it, tell the court here, that they had changed the line of the road bed?

A. How would it be done, you say? How did they change it?

Q. No, how that would cause—or how would that indicate that they had changed this line, the road bed to the right or to the left? You understand what I mean?

A. They changed it for a better road.

Q. We understand, Mr. Fobert, that they changed the road bed, from what you say, but what I am trying to get at is to have you tell the court whether the way you knew they changed it was because they had set stakes indicating that line was moved this way or that.

A. Yes, had stakes.

Q. Did you see the stakes at this time indicating where the original road bed was to be. Do you know what I mean by original?

A. Original, in the first place.

Q. Yes. Now, there were stakes there the first time you went on this work to make this cut, showing where the center line of that road bed was?

A. I was very—

Q. I am speaking of the time you were there.

A. Had to be there to see the location.

Q. Were they there?

A. Yes, there were stakes there.

Q. And you saw them?

A. Saw them; didn't see them all; I saw some stakes.

Q. Did they change these stakes while you were there?

A. This right of way?

Q. I mean here at this point, right there at that point, those stakes one way or the other?

A. You mean the center line stakes?

Q. Yes,

A. Yes, up the hill.

Q. When did they change those?

A. I couldn't tell you.

Q. You say that the road bed was moved further up the hill. Now, if they moved it further up the hill—

A. Not the road bed, the line.

Q. Wouldn't they set stakes to indicate where it was to go?

A. Yes.

Q. And didn't you proceed on your work there

as indicated and shown by those stakes? For instance, you saw stakes set here.

A. Was stakes set for this line before it was cleared, I saw those stakes.

Q. Now, then, they moved those stakes?

A. They run a new line.

Q. And they set stakes to show where that new line was, didn't they?

A. Yes, sir.

Q. And you saw those stakes?

A. Saw the stakes.

Q. And you knew then from that that they were moved from the original point?

A. Yes, sir.

Q. Moved further up the hill?

A. Further up the hill.

Q. Now, they had to set the stakes further up the hill before you would know where to go through with the steam shovel, wouldn't you?

A. This cut here—

Q. In other words, in going through this cut with the steam shovel, you would follow the stakes, wouldn't you?

A. This was done by hand, this one cut there.

Q. Well, if done by hand, you would have to follow the stakes, wouldn't you?

A. Follow the cross section through before you grade.

Q. What do you mean by cross section?

A. They put stick on each side, one in the mid-

dle every fifty feet. They put a mark on the stick the depth of cut.

Q. When they cross sectioned this part of the work, you say you saw that stake at some point; was that stake at the same point it was when you first saw this work?

A. I didn't check it up.

Q. You can't say, then, they moved the road?

A. I wasn't there to check it. I don't remember. I just had to follow their stakes. When they gave me stakes, we were to follow.

Q. Then the only way you know they made the change there is the fact you went further up into the hill?

A. Yes, sir.

Q. How do you know you were getting further up into the hill than they originally planned, if you hadn't seen the stakes where the original center line was?

A. One way I can tell, this cut here was also taken out by hand, ready for the steam shovel; light cut; already for the steam shovel to come through; also I had my dinky track; had graded around every one of these points here, these little cuts all graded by hand to take the truck down; when the shovel got there we could get to work at once; that is how I know they threw the track up there. When I got in with my shovel, I put the shovel in this cut where already taken out by hand, put on hillside, and took out more material and finish; put my fill in and finished up.

Q. You mean to say before you put your steam shovel through there, you had been through there by hand?

A. Yes, sir.

Q. When you came along with the steam shovel, you had to widen those cuts, is that what you mean?

A. Yes, sir, this one here had to be widened.

Q. Why was that?

A. Borrow.

Q. Why did you have to widen?

A. Borrowed there to put in fill.

MR. FREED: What station that you had to widen?

MR. DOBSON: That is about 435, I would say.

A. 434—433 plus, right here where the fill is.

Q. About 433. Now, I understand, Mr. Fo-
bert, you had gone through here then from Station
430 and to what station, where?

A. What are you getting at?

Q. This handwork you claim.

A. This was hand work right here.

Q. Up to 440, is that correct?

A. Yes.

Q. And you had finished that in there by hand,
according to the stakes that had been set out?

A. Yes, according to the engineer's stakes.

Q. In advance of your work?

A. Yes.

Q. And after you had done that, you came along
with the steam shovel, is that correct?

A. Yes.

Q. What did you do with the steam shovel in here?

A. I put the steam shovel in here, and borrowed material to finish this here.

Q. Why did you do that?

A. Was ordered by the engineer.

Q. Was it because of some change in here?

A. This dump was put in just wide enough to get the shovel across from these hand cuts.

Q. Did they set stakes after you had gone through here and opened up these cuts by hand; did they go through there and set stakes to indicate they would change the line a little further or move up the hill a little bit?

A. After we went through?

Q. By hand, yes.

A. The line was changed, yes.

Q. That is the reason you took the steam shovel plant in there and widened that out; is that true?

A. Took the steam shovel in there, and took out the rest of this cut up the gulch to here.

Q. You are going up to Station—

A. Here is the fill about 447 plus. This cut over here, that shows grade here. When we changed throwing the line up hill it shows a cut; shows a grade here, and when they swung line up the hill, made a cut.

Q. We understand, Mr. Fobert, that you are stating repeatedly here that they threw the line further up the hill, but what the court don't know,

and what I don't know, is how you know that wasn't the original location of that road bed.

A. I already told you, Mr. Dobson, this cut was taken out by hand, according to the engineer's stakes, up to the slope stake. We had the fill just wide enough, about seven foot cut, just wide enough bridge to get the shovel across, swing her in there to finish that fill, and what material—after this fill was finished, the rest of the material, these cuts, these two cuts, where this change was made, went into this fill here.

Q. I understand that perfectly, Mr. Fobert, that there was a change made there, but what we are trying to get at is what you saw there that indicated that change was made. The thing that I would suppose you would have seen was this: that they had stakes first set out on the original—you know what I mean by original—center line; later they set out their stakes in that original line to some other point. That is what the court wants to know, whether they did that.

A. The first location here they was keeping out on the edge of the hill, the curve. When they borrowed along there, the material was to come out of this cut. There wasn't enough to make the fill. They went to work and swing up the hill, put the shovel in the hill, and borrow enough to make the fill ahead. This fill over here at Station 447 plus. After this material was taken out of here, there was enough material; these curves all cut out; they put their track through there.

COURT: Did they take the material out of these cuts because of the change in the line, or for the purpose of making the fill?

A. For the purpose of making the fill. They are supposed to be to grade.

Q. Then, Mr. Fobert, it was not due to the fact that they had moved the line up or down the hill. Is that correct?

A. Moved the line up the hill, into the hill.

COURT: They moved the line into the hill after you had taken out the material to make the fill?

A. They had the road bed.

Q. Now, let's pass for the time being up on to some of these other cuts. We have one around Station 450. Start at Station 450 and just explain.

A. Station 456 somewhere along there, there was another change made after I had my light dump, after this little dump was built by hand.

Q. Was that dump the fill?

A. I mean fill. This little fill was put in by hand, and my dinky track, on narrow side cut below that material and haul; was grade around these cuts, and they changed it up the hill, made bigger work, bigger cut, straightened the road bed in here.

Q. That is to say after you had gone through there and made your grade, established your grade?

A. Not the grade, not the original grade; that is for the dinky, the car we was hauling material out there.

Q. You had gone in ahead and put in your dinky cars, and you put in your dinky cars at a point where

the stakes indicated or showed you they were going to build the road bed.

A. Yes, the cross section stakes.

Q. And as I understand you you had done some preparatory work, is that it?

A. Yes, sir.

Q. After you had done that you say they came along and changed it; moved up further into the hill.

A. Further into the hill.

Q. What did that cause you to do? What did you do when they did that? What did you have to do when they did that? What additional work?

A. I had to dig—give them more material; that is all the difference it made, give more material.

Q. Did what?

A. Increased the yardage, made bigger cut.

COURT: How did it affect your dinky track?

A. Didn't affect the dinky track any at a certain point; the hill was steep, didn't have to be up the hill much to make heavy work. Here is Station 463, 464 about; it shows trestle here; a fill; this trestle was cut out. The line was thrown out toward the river there, made a bigger fill and cut at Station 460. That was a bigger cut. That was a bigger cut up the hill, and the cut shows here to be a six foot cut here. It was about—the change made it about—the first change it made it about from 40 to 81 foot cut on the high side. Profile shows six foot cut.

Q. In other words, they moved the road bed at this point, referring to Station 467.

A. This cut here, 467, up to four—this cut is

only 150 feet long as shown on this profile, six foot cut.

Q. Station 466, then, we will say up to about 469; is that it?

A. Yes, sir.

Q. That cut, you say they moved that in such a way—

A. They threw it up the hill to straighten the curve.

Q. I understand you to say they increased that cut from 40 to 80 feet?

A. Yes, sir.

Q. On the height or length?

A. In height on the high side.

COURT: You mean a bank of 80 feet?

A. Yes, it shows fill here of 13 feet; this profile shows fill here.

COURT: We are talking about cut.

A. This is cut. I want to show you this cut,—is a fill now; in the new change it is cut. This profile shows fill about 13 feet at Station 470, and at Station 474 it shows grade. At Station 475 between 475 and 476 it shows eight foot of a cut here. About 75 long,—seven foot high. One side of this fill in there at Station 470—it is a cut right opposite that fill; it is a cut, I should judge, I didn't measure it, I have seen the stakes, but I don't remember the stakes; as near, as close as I can get now, would be a cut of about 18 or 20 feet, maybe better.

COURT: In place of a fill?

A. In place of a fill.

COURT: Was that because they moved the road up the hill or down the hill?

A. They moved it up the hill.

Q. In other words, instead of crossing at the gulch there they moved it up against the side of the hill?

A. They made a bigger fill. They moved out the fill.

Q. I thought you said they done away with that fill?

A. Done away with this bridge.

COURT: You said a moment ago there was a cut where the profile shows a fill.

A. It is, your Honor, this cut there; as I told you a moment ago, is a cut there of 20, maybe more.

Q. What do you mean by a fill there?

A. This profile shows a fill of 13 feet.

COURT: Ddi you put in the fill?

A. No, was a cut instead of a fill.

Q. I don't believe the court understands how you can change a fill to a cut.

A. I didn't change it; the engineer changed it.

Q. How do they do that?

A. The engineer done that work.

Q. How could they do it? How could they change that?

A. I wasn't there to check the engineer.

COURT: You know the contour line there. How did they get a cut where the profile shows a fill?

A. They wanted to cut some of these curves, I

expect. They have to have almost a straight road there instead of all those curves.

Q. I wish you would listen to what the court asks you. The court didn't ask you that. The court asked you what they did there to change this from a fill to a cut. It isn't a question who had the right to do it. It is a question, what did they do?

A. I don't understand it. I can't catch that. I show you where—

COURT: I understand the profile at a certain place shows a fill. Now, you say that was changed to a cut?

A. A cut.

COURT: Where was the cut located with reference to the fill?

A. Just moved up the hill.

COURT: How far up the hill?

A. I can't just remember how far, your Honor.

Q. Now, Mr. Fobert, you say—where is this map—470, isn't it? Now, that profile, through looking at the profile you would say that that line dropping down that fashion would indicate that was a fill; would have marked a fill there from looking at this profile.

A. Yes, sir.

Q. You were on this ground?

A. Yes, sir.

Q. As a matter of fact, was that a fill there?

A. Yes, the profile shows.

Q. No, you were on the ground, weren't you?

A. Yes.

Q. Was that a fill? In other words, did this profile state or show the real condition, show that it was a fill? Was it a fill, in fact?

A. Yes, the profile shows a fill.

Q. Was it a fill?

A. No.

Q. In other words, was no hollow in the ground there, is that it?

A. Hollow? Where I put the grade in? Not where I put the grade in.

Q. The road bed runs along here, indicating at point 470 that the road bed ran over a hollow here; in other words, you have to make a fill to hold up the road bed. Now, was this road bed moved up here somewhere?

A. Moved up.

Q. In other words, they changed the center line of the road bed up the hill?

A. Yes.

Q. And in doing this, they got away from this fill; is that correct?

A. Yes, you get away from this fill, get away from the bridges; take out the bridges, and put in fills to take the place of bridges.

Q. Now, Mr. Fobert, if you can, I wish you would just get yourself together a little bit. You have been in this line of work a good many years, haven't you?

A. Yes.

Q. When you go out upon a piece of work to

build a road bed or a railroad, you always work under the directions of an engineer, don't you?

A. Yes.

Q. This engineer isn't always right at the point where you are working, is he?

A. No.

Q. How do you know what he wants you to do?

A. Stakes on the ground; have to follow his stakes. He starts you out and stakes in the ground; have to follow his stakes.

Q. If that is a fact, there must have been some stakes at this point up about Station 470, when you went on this work, wouldn't there, some place in there?

A. Yes, sure there was. Couldn't have worked without stakes.

Q. Where were they? Were they on the line? Could you tell by the stakes that were still there when you first went up there, if that was to be a fill or a cut? What did the stakes indicate?

A. Through here?

Q. Yes, what did the stakes show you? Would the stakes tell you what to do there when you first went up there?

A. The first location through there—

Q. Let's don't get away; let's get right back; you went right here to this point to do the work of building this road bed, and there were stakes right here, 470, about that, to indicate or tell you what you were to do?

A. Yes.

Q. Where were those stakes? Did they tell you that you had to make a fill there? Did those stakes tell you?

A. No, never seen that fill.

Q. Well, you were on the ground here, weren't you?

A. Yes, sir.

Q. And you just testified that they changed this from a fill to a cut. Now, you say you never saw the fill.

A. I never saw that fill in the cross section.

Q. You mean you never saw the cross section of it?

A. When they run a line, locate line, it isn't cross section there; cross section is set on grade work. When the cross section is in, that is what you have to go by, the grade. This place right here, the line was changed about three times. 470, about the middle of the cut shows in here; this line was changed through there, and thrown up the hill. Was thrown up too far; one stake was up 81 feet, one stake. So they moved it back down again.

COURT: Cut the 81 feet?

A. Just one point slope. The hill went up almost as steep as the slope. They didn't throw that cut all over, just one point; steep side hill, as steep as a man could walk. And afterwards they cut there, swung down the hill a little more; then we took the material and put back in the fill—finished fill 464, and some of the material went to fill 476 and 477. So it took what material there was in that cut in these

two fills; took all the material there was in those two cuts to make those two fills; instead of being fill here there was no fill there; it is cut, solid cut.

Q. Was that beyond the point we are just talking about?

A. Just the same point.

MR. DOBSON: Does the court understand it now?

COURT: I am not sure whether I do or not.

Q. I will ask you one more question. When do they set these cross section stakes?

A. The first location of this profile. This cut here was mostly side hill; we cut here, throw in that fill, and this line here is into the hill over eight feet in the center line; that is side of the dump, very little fill, very short, and on the low side of the center, about 40 foot, throw that dump 40 feet. It wasn't long. It went around the hill like this, and this cut here is about six foot cut, while the low side would be a little bit, maybe little bit of a fill to the grade, the highest point of this cut. You see that was intended for side work, and this way shows that fill is here, this line, instead of this dump; might be just level. The side of this dump don't show to take a fill. The low side of that dump would be bigger fill.

COURT: Follow along the contour of the mountains?

A. Yes.

COURT: The side of the mountains?

A. Yes.

Q. Is that what they did there, they followed around the side of the mountain?

A. That is what this profile shows.

Q. What they did is what I want to know.

COURT: Not what the profile shows, but what you actually did, what work you put in. You say there was a change there.

A. There was a change there, was a bigger fill, bigger cut, and they had to throw the line up the hill to make a better line, to straighten their road, and throw a bigger fill and bigger cut. The cut was bigger, and across this hill was a bigger fill.

Q. What you have just been talking about, Mr. Fobert, is between what station? Here is the fill you are talking about?

A. Yes.

Q. That is between stations—

A. Between Stations 462, somewhere along there, and Station 476—cut.

Q. The profile, as I understand it, indicated you were going to merely follow the contour of the hills; is that correct?

A. Yes, sir.

Q. You didn't do that. That is, you moved—the line was moved up further into the hill.

A. Further into the hill.

Q. Let's pass on from 470 and see if you can tell the court what happened beyond this point.

A. From Station 477 to Station 480, it shows on the center line about a four foot cut. The line was thrown up the hill, made a bigger cut, thorough cut;

and at Station 480—481, the profile shows trestle here, one span and a fill. This trestle was fill. Instead of trestle they cut the trestle out, and it was a fill. And from Station 480 across that trestle to be built, that cut was increased from six foot cut—I may be higher—there was an increase there, but I don't remember the height of it. It was thrown up the hill all along here, because it shows a little fill along here; shows three cuts here, and was thrown up the hill so it made one cut out of these three cuts; thrown into the hill further; a real steep hill.

COURT: Between what stations?

A. Between Station 480 up to Station 492.

Q. Now, then, to get this into the record a little better, the profile shows, as I understand it, two fills in there. Is that correct?

A. The profile shows two fills and three cuts.

Q. Now, I understand you to say that roadbed was changed in such a way those fills were entirely taken out, and it was all cut?

A. All cut.

Q. And as I remember it now, that necessitated hauling material out, or did you cast it over the side?

A. There was some material wasted there. Too much material in the cut.

Q. The point is this: Did you put the steam shovel in there and throw it over the side, or did you have to put your dinky and haul the material out of these cuts?

A. What material was wasted goes down hill, just goes on waste.

Q. What I am getting at, was what part of that that was not waste did you haul?

A. I hauled some of it in this haul.

Q. Then you had to put in dinky cars, didn't you, and haul some material because of that change?

A. Yes, sir.

Q. Would you have had to do that if they hadn't made this change? Suppose they had built it just as the profile shows, would you have had to put your steam shovel in and haul the material back and forth?

A. No, wouldn't have had to haul. This material would have been cast altogether, wouldn't have had to have any car and track at all, this piece here.

COURT: How would you have made your fill?

A. Shovel; throw it over. It was half and half, your Honor.

COURT: Take out of the cut and put in the fill?

A. Was half and half.

Q. That isn't exactly it. Can you give a little diagram how they make the fill without hauling material? Just show the court how they make the fill without having to take out the cuts and hauling.

A. Say this is side cut here. This is the width of the roadbed, about half; at this cut here, and where it shows these fills here will be a little cut, little bit of light cut; run into little bit of light cut on every side. Of course finish the work with steam shovel; do it all and bring it back; done to have car and track and engine and engineer and brakeman and dump field, and lay your track.

Q. See if I can get this clear in the record. These

fills indicated by profile at Station about 485 and 489, those are along close to the contour of the hillside, is that right?

A. Yes, sir.

Q. And running your steam shovel along there you would take the material along the side of the hill and drop it down into this fill?

A. Yes.

Q. When this work was changed you couldn't do that?

A. You couldn't do that. Have to do as the engineer tells you.

Q. No, that isn't what I mean. As a matter of fact on this piece of work you didn't do the work as you now describe it to the court, but have to haul material back to make these fills?

A. Made these fills wherever the material required from the cut hauled these cuts back for this fill here.

Q. You hauled the material back from these cuts because of the change in the line?

A. Yes, sir.

Q. And made these fills which you planned on filling on taking the steam shovel back to clear up above, and drop over the fill? Is that correct?

A. From this cut to this fill here was some waste here.

Q. Beyond this point, that is Station 490, just tell the Court what if any changes were made up there, and what your work was increased, if any.

A. From Station 491 another change in this cut.

This cut only shows about ten or twelve foot cut—about twelve foot cut at highest place; that cut was thrown up the hill and made a bigger cut; made a thorough cut, instead of an open cut on the lower side; made an open cut on the lower side; might have been highest point of that cut on the lowest side, one foot cut; fill a short distance. When this change was made here, we had this small little cut here, just scratch work, just ballast stuff and leveled off; had a little piece of work done, not very much, had men at work about one day or day and a half, somewhere along there. They went to work and raised the grade, made a fill; where it shows a little cut is a fill.

Q. What did you have to do to make that fill?

A. Hauled material from this cut.

Q. Was that shown or indicated by the profile? Could you tell from the profile you would have to do that?

A. Tell the profile, you say. What do you mean?

Q. You say they made a change there, and you had to make a fill there you hadn't expected to make. In other words, from the profile you wouldn't say would have to make that fill or haul material.

A. The profile shows only just a little bit of thing. When they raised the grade, it threw this line up the hill, higher, made a bigger cut. I expected to straighten up the grade—I don't know—curved. They raised the grade to take care of some material.

Q. Then you had to haul material to make the fill, is that it?

A. Had to haul material to make the fill. This

fill here, where it says to be four foot fill here, was all in by hand.

Q. You had already done that?

A. We had already done that.

Q. Then they came along and changed that afterwards?

A. And raised it, wasn't filled though; they raised the fill there and made it higher, and that material was in the fill; of course we took it out of the cut; where had to be filled, we took it out of the cut.

Q. Took it out of what cut?

A. Took it out of this cut.

Q. That is about Station 499?

A. Took it out of this cut here. This cut shows here about four foot cut on the center line. The line was changed all over, thrown up the hill all over; made this cut bigger.

Q. How much bigger, about?

A. Not so very much bigger, some of them.

Q. Approximately about how many feet up the hill?

A. This cut here was—pretty near, not much different than what shows here. They threw it up the hill, and the hill was not very high; and they raised the grade so it threw the cut up, the same thing.

Q. Cut about the same amount of material?

A. The cut was about the same. Might have been a little more; might have been just exactly the same; very little. It looks, the work done in this

here about the same. Isn't the same line. Been moved up the hill. Now, here this cut—this fill here there was another change—

Q. That is Station what?

A. From Station 513, along there, 512 or 513, along there, this little cut here was out by hand, just scratched a little bit, didn't amount to nothing, a foot around there, for about 200 feet, averaged about a foot cut—was done, done by hand.

Q. Then what happened?

A. This fill here I had my trestle in; trestle is the temporary trestle for my dinky car to haul the material for dumping this fill to build up the grade, for dinky cars or dirt cars to haul the material to make the fill. I had the bed in, Johnson come along and changed the grade again.

Q. Who was Mr. Johnson?

A. The engineer on the work.

Q. How much did he change it?

A. He changed it about Station 512—513 close, and cut it down. Made a stiffer grade here to cut the yardage down.

Q. How much did he cut it down?

A. I had a trestle there up, oh, I should judge the highest part of that fill there—you can't go by that profile there—shows a fill, but don't give exactly as had it there, but I should judge eight foot fill at the deepest part of it; from nothing to eight foot fill.

Q. Nothing to eight feet. How much did he change it?

A. How long, you mean?

Q. No, up and down how much?

A. At that time he just lowered the grade.

Q. How much? How much did he lower it?

A. I had to take my trestle down and cut it more than half, a little better than half. The trestle was too high.

COURT: How many feet? How high was your trestle?

A. The highest point I had there was about eight or nine feet.

COURT: To cut it in two would take it down about four feet?

A. Take it down about four feet.

Q. That was done after you built the trestle?

A. The trestle was built, some stringers on there, not all of them, but some stringers on them.

Q. Anything else pertaining to that?

A. Now, this cut here shows trestle here; where it shows trestle here it was a fill. This cut here was a thorough cut. This profile shows the line here where located, a side cut.

Q. In other words, the profile indicates you would simply dump the material over the side? Is that right?

A. This material here.

Q. Yes, you would throw it over the side according to profile?

A. Not this cut. This cut had to be hauled out. You had a nice grade for your dinky track on the grade your grade went in there; I had a good grade convenient for to take out. This cut was thrown up

the hill, and made a thorough cut. And they wanted every bit of that material for the fill; supposed to balance the fill. I had to build my temporary trestle strong enough to carry my shovel over—shovel about eighty tons. It gave a little extra work. I used the trestle, the same trestle for dumping dirt to fill the fill. Answered both purposes. Had to be there anyway, only not quite so strong. Some of that material went in here, mostly all of it, some of it; did take some of it by hand, thrown away. Cut 524 to 527 plus, was a very mean cut for the steam shovel, was as mean as you could lay a cut for a steam shovel; stood straight up and down. Took a lot of work to grade an incline for the dinky so we could get up; we couldn't handle as many cars; we could only handle one train because the grade was too steep.

Q. Was that situation due to any changes that were made?

A. That was due to the change. Was fine steam shovel cut before the change.

Q. Was what?

A. Was good steam shovel cut before the change; was just as mean a cut as I ever done in all my railroading; was gravel and solid rock, and you didn't know was solid rock until you dug into it. Was a mean cut for the steam shovel.

MR. FREED: You say you couldn't tell it was solid rock until you dug into it?

A. Solid rock would be covered with cement gravel; was very sharp little cut.

Q. Mr. Fobert, do I understand—would that have been a mean cut before they made the change?

A. Would have been a fine cut before the change was made, nice cut.

Q. They moved further into that hill and made a mean cut; that is what you say?

A. I don't mean they moved it for anything like that, but the engineer on the work don't look out for your work; he looks out for his own work.

Q. I understand that, but the fact is because they did move it made it a very difficult piece of work?

A. Yes, a very mean piece of work and might cost a little more.

Q. About how long were you in that cut, just as you remember, approximately; you don't have to fix the exact number of days. I want to give the Court some idea of approximately how long you were there?

A. About, oh, maybe eight days—eight or ten; I wouldn't say exactly that; I didn't keep track of it.

Q. That is as near as you could tell?

A. I knew then; after the cut was done I could tell you exactly how long was there.

Q. How long would it have taken you to make that cut if they hadn't made the change; about how long?

A. A day-and-a-half; two days. There wasn't as much yardage in it before the change.

Q. And the increased yardage, together with the increased difficulty took a longer time?

A. Yes, sir.

Q. Now, Mr. Fobert, anything else to say about that?

A. Down at this one?

Q. What happened after that?

A. This cut here—here is another mean cut for steam shovel, awful mean. It's so straight here, your Honor, you can't walk up.

COURT: Where is that?

A. At station 538; no, just a moment; that is fill and cut both; from station 535 to 538, the length of this cut, there is a hundred feet straight up and down.

COURT: Change in the alignment there?

A. This was a side hill before the line was changed and made thorough cut; it was an embankment between that stretch; river below it. There was a strip of land not quite a hundred feet long—around a hundred feet; there was no way to haul that material out; the only way to haul that material out was to take that little point, put in the steam shovel and—make my dinky track, put in the steam shovel and kick that point out there, so I could make this fill here.

Q. You say on this point you had to kick—

A. My dinky track, I had to grade with steam shovel to make it.

Q. At station what?

A. 537.

Q. At Station 537 you had to kick out the point of a hill?

A. I had to dig this point; that was the quickest

way and the cheapest way it could be done—kick the point, that is, down out of there; the lower end below this point, to get in on the fill; just a short kick to get in on the fill; had to be done; then back up and put my track down and take it out.

Q. That was to enable you to get in with your dinky cars to haul the material out?

A. Yes, sir.

Q. About how long did that operation take approximately? You don't have to—

A. Just to kick this little point out for my dinky track for to make the cut?

Q. Just to make the cut, the whole thing?

A. Didn't take very long.

Q. Two or three days?

A. About three or four days.

Q. Was that caused by the fact that they changed the line at that point?

A. Yes, they threw it up the hill and made a bigger cut.

Q. Before that time you would simply have gone in with the steam shovel and thrown it over the side?

A. Over the side; if had to be hauled could have put the track on the grade.

Q. The change caused you to have to do this extra work to get your dinkey track in?

A. Yes, sir.

Q. Increased the difficulty of the haul?

A. Yes, sir; now from station—this little cut here was taken out by hand.

Q. That is about Station 540?

A. Not quite all of it; a little bit left; mostly taken out by hand, and this profile here shows a fill on the center line of approximately about eleven feet; well at about four feet from that center line—two feet from that center line would be about forty feet straight down to the river, so that line was—must be the reason they threw the line up the hill; this profile here shows cut about one foot up from center line; quite a little side hill cut, not far back, a little bit up the hill, so we went along with the shovel from that point, and cast it over. And over here, up to this, I guess this cut over but not—took the full width of the grade. You see this place here where the cavein. Dirt sometimes comes down and caves right in; sometimes have a slide in a cut of 50 to 500 yards. All at once lets go in the hill and comes down; was some in that cut, been some slide right along there.

Q. Did that happen in there while you were at work?

A. Around in there; some came down; not that much, but some few yards came down there, two or three hundred yards slide, in more than what the stake calls for; we went on through here and made this fill where it shows the fill here, and there was a little fill there, was a little cut up here, very little. I got enough material here to make that fill, so I wouldn't have to bother with any car and track.

Q. Were there any changes made, referring to fill at Station 545 to 550. This cut here, were any changes made in the line there?

A. They connected in there; the change back here would connect, in here some place.

Q. They went up to the original line? About that time?

A. At this place where they explained awhile ago there was close to the river, was thrown up the river. They didn't go over there, was a sharp curve in there. They connected some place in there; I couldn't tell just where. In here it shows this fill just about the same as this profile shows. I don't think changed at that one point. The side hill was very light cut, just like this, about that much instead of following that. I took this material there with steam shovel and put it in and borrowed a little bit to make the fill as I went along.

Q. That is shown in the profile, isn't it?

A. Yes, shows here.

Q. What I want to get at is the changes.

A. Here at Station—I started to take that dinky track and the cars. I was going ahead. I dug a track around there with my shovel.

COURT: Around where?

A. Around this cut. It is Station 555 to 557, shows a cut on the lower side of this. Took some material that was in that cut and throw to one side because was a very light fill to be made here. I was grading my dinky track with shovel on grade to make it, had to grade instead of being by hand. Placed me ahead on shovel; other places too much work to do. That place had shovel in. Ordered to close down right there.

Q. That is the end of the work?

A. That is the end of the shovel work. Shovel work closed down at 567, I believe is the exact number—that is where the shovel was ordered to close down.

Q. From that point you left the work?

A. There was work done ahead by hand.

Q. That was by your company?

A. Yes, was some of it light work.

Q. Did you have anything to do with that?

A. That is the same as the other.

Q. Were there any changes made in the line that affected that work that you did by hand on above?

A. There was a little bit of work done there, light cut; after the grade was completed, the grade was changed; very easy to make that; started to run the line up and down more from that point on.

Q. Mr. Fobert, were you ever up on that work after you were ordered to move off?

A. We had to move our outfit.

Q. You moved your outfit?

A. Had orders to move our outfit.

CROSS EXAMINATION

Questions by Mr. Freed:

Q. Mr. Fobert, you spoke of changes that were made that caused these different excavations. You understand what I mean? You spoke of changes?

A. Yes.

Q. You don't mean to tell the court that our engineer had this line staked out, had his cross sec-

tion stakes in, and then picked them up and changed them, do you?

A. In places, yes.

Q. That is what you mean?

A. Yes, in places; not all over.

Q. How much of this change was that? I don't care to go through it.

A. Not very much.

Q. Wasn't very much of that?

A. Not what had cross sections there.

Q. Not very much?

A. Quite a little bit; not all of it.

Q. If you can, tell us how much, what proportion, whether a half, a third, or a fourth, or a fifth, that you refer to were changes after the cross section stakes had been put in the ground?

A. After the cross section stakes were put in the ground?

Q. I will ask you how much change would that mean. I am not asking you to give it to me in yards, or anything like that, but whether one-half, one-third, one-fourth or one-fifth of the changes.

A. You mean after the work was cross sectioned, how much of that work was changed?

Q. Yes.

A. And how much work was done on it; was that the idea?

Q. No, sir.

A. Just the change.

COURT: How many changes were made after the cross section stakes were first set? How many

changes were made in the road, and new cross section stakes set.

A. From Station 466 to Station 475, about; that is, there was no work done.

Q. What is that?

A. There was no work done on that cut; was cross sectioned but no work done.

COURT: Cross section stakes set, but no work had been done.

A. Cross section stakes set, but no work done, then they picked up these cross stakes and moved down hill; a little bit lighter, the fill.

Q. You didn't start to work on the basis of those cross section stakes?

A. No, sir.

Q. Just go on so the Court will understand.

A. Another cut over here at Station 478 to Station 480—that cut was cross sectioned, and then the stakes pulled out and moved up the hill a little more.

Q. Had you started work on that?

A. I had my dinky track in, but didn't affect the dinky track at all.

Q. The fact that it was changed after cross sectioned, didn't affect your work?

A. Not that change.

Q. Just proceed.

A. From Station 481 to Station 492, shows three cuts here. I had my track, already had my dinky track graded on the low side, very little work to do on grade to put these three little cuts in these three little fills.

Q. Were the cross section stakes in?

A. Cross section.

Q. And after the cross section stakes were in, and you started to work on that basis, they were moved. Is that what you mean to say?

A. They were moved up the hill a little bit.

Q. How far?

A. Not very far; couldn't go far.

Q. Could you tell the court how far the alignment of this railroad was changed at that point?

A. Might have been—the grade might have been moved up here six or eight feet, somewhere along there; in places maybe not that much; in places more than that.

Q. At that point, Mr. Fobert, how far ahead of you was the change made? You understand what I mean?

A. Yes.

Q. You were working along here, for instance.

A. Yes.

Q. And that line is the point you were speaking of? How far from that were you when the change referred to in the cross section was made?

A. This change was made far enough ahead it didn't delay me.

Q. Didn't affect you very much?

A. Not very much; had a little work done on the track but didn't affect me very much.

Q. What station is that?

A. From Station 481 to about 492, along there.

Increased the yardage a whole lot, but didn't hurt the work I had done.

Q. It merely meant, when you came to it, you moved more material?

A. I didn't move more material; was a little bit cast on this certain point here; material here that I had no place to put.

Q. What I mean to say, we didn't deceive you. You didn't start work on the basis of this cross section, and then have a change to throw you out?

A. Sir?

Q. You said at that point, these two stations, 481, isn't it, to 492—you said between these two points after the cross section stakes had been put down, they were pulled up and thrown further up the hill. That is a fact?

A. Yes.

Q. And I believe you said were thrown up six or seven feet, didn't you?

A. Somewhere along there. I may be off a foot some way. That is just as near as I could. I didn't check that engineer, I wasn't there for that purpose.

Q. Now, I am asking you whether or not the moving of these cross section stakes by our engineer put you to any more trouble. Now, before you answer it, what I mean by any more trouble is not that it caused you to excavate any more material.

A. It increased the yardage, gave me more work.

Q. You excavated more material?

A. Yes, sir.

Q. That is all of it?

A. Yes, sir, that change there, more work.

Q. You excavated more material?

A. More material.

Q. Now, I am asking you how far ahead of you was this change made? That was the question I illustrated here. This light is the point where the change was made. How far—you were working that way—how far distant, where were you here when Mr. Norris changed the stakes at that light?

A. How far?

Q. Yes, how far ahead of you did he make the change?

COURT: About how far?

A. This is all changed all the way up.

COURT: Where were you at work at the time of the change?

A. This is where I was at work at the time.

COURT: Where were your people at work?

A. Men in these cuts; men in these cuts taking out by hand. Lots of that work done by hand.

COURT: You mean between Station 489 and 492?

A. I say on all that.

COURT: You mean you had to carry out work between these two stations at the time the engineer changed the stakes? Did he change the stakes after you began to work on that section of the road.

A. Changed the stakes just before the shovel got there.

COURT: Just before what?

A. Before the steam shovel got there. Along that side hill we had enough graded for a dinky track. The track was already laid.

COURT: And that was before the stakes were changed?

A. Yes.

COURT: That was done before the stakes were changed?

A. Part was done before—I won't say all of it. Mostly all of it was done before the stakes were moved up the hill a little bit. Your Honor, it didn't affect my track.

COURT: Moving up the hill didn't affect your track any?

A. No, sir. It just increased the yardage; gave us more work; that is, throwed the roadbed on solid—

COURT: The only way it affected you was to increase the yardage?

A. Increased the yardage, more yardage.

Q. As we go along—you got pay for the extra work, didn't you? That is, you were paid for what work you did? If you had to excavate—if you had to dig out 50,000 yards more material because, or on account of Mr. Norris throwing the road up the hill, you got paid for that 50,000 yards?

A. I don't know if I did or not. I never had any estimate.

Q. What I mean to say was, that was supposed to count in your cost, wasn't it?

A. Supposed to.

MR. FREED: You admit that?

MR. DOBSON: No question about that.

COURT: The plaintiff got paid for all the yardage moved?

A. Was paid for some. I don't know whether paid for all or not. Never seen any estimate.

Q. Were supposed to get paid. I am not trying to tie you up that we don't owe you anything.

MR. DOBSON: He knows nothing about that.

MR. FREED: No point on that.

MR. DOBSON: You paid us from month to month for the yardage done.

Q. And that is the only way that the move bothered you any?

A. Yes.

Q. We moved the stakes. Just proceed on and tell the court about the other changes, where the change was made after the cross section stakes were put in, the same question.

A. 492, that shows a fill here. Here is a cut here on the center line that shows.

COURT: Were the cross section stakes changed there?

A. 500; from 498 to 503, cut shows on this profile, about a 12-foot cut at the center line. That was about, almost the highest part on it, on the lower side would be about a foot cut.

COURT: Were the cross section stakes there?

A. Yes.

COURT: And then changed, afterwards changed?

A. Yes, after I done some work with my dinky, took out some of that cut, this was changed and thrown up the hill.

COURT: How far?

A. About maybe 20 or 30 feet, as near as I could tell you.

COURT: Did you lose the work you had already done?

A. Yes.

Q. How much work had you done?

A. I had the men there about two or three days, somewhere along there.

Q. How many men did you have in there?

A. Quite a few men. About 12 or 15 men and the foreman.

Q. And that work you did in those two or three days then, you say didn't go towards helping get the road done? That is, the Judge asked you whether you lost it, and you said yes, and I want to know whether you mean when you say "lost it" whether that didn't become a part of the roadbed.

A. No, it was lost.

Q. There was a grade made, and just left it, is that the point?

A. Lost. Was a little bit, might have been a very little, might have been, oh, three or four days, might have been about half a day, three-fourths of a day, might caught the toe—

COURT: What?

A. Might have been half a day of this three or four days' work, of this two or three days' work

along there, as close as I could tell you. Might have been some a little bit went in, very little where they catch some of the fill; not very much; practically all lost.

Q. What kind of work was that lost? What had you been doing?

A. That was dirt and loose rock.

Q. Excavating, digging out?

A. Yes.

Q. And that change was made after the cross section stakes had been put there?

A. I was working with these men when the change was made.

Q. Who made that change?

A. Mr. Johnson, the engineer on the work.

Q. That is the assistant to Mr. Norris, isn't it?

A. Yes, sir.

Q. You were working there personally at that time?

A. Yes, sir.

Q. And he came back and told you there was to be this change?

A. Yes, sir.

Q. Well, did you tell him that you didn't favor that?

A. How do you mean favor?

Q. You just went ahead and did it?

A. Just did as he told me.

Q. You didn't object to it, did you?

A. No, sir.

Q. You didn't say it was slowing you up, or

that it was not within your contract, or anything of that kind, did you?

A. I just said too bad so much work done for nothing—that is all I said.

Q. And it wasn't a matter of your saying, "I don't want to do it" and he said "You are going to do it"?

A. I don't do that kind of work. When I work for a man I work to suit him.

Q. So you went along and did that without objection to it?

A. Yes, sir.

Q. You felt, however, you say, it was too bad?

A. Yes, sir.

Q. To lose that work?

A. It is a shame.

Q. Just go on further with the changes.

A. Station 503 to 505 there; a little bit of a cut here, very small cut.

Q. Had the cross section stakes been placed?

A. Yes. It was done; been done by hand. This little bit of cut; this cross section was graded by hand.

Q. Then what happened?

A. Put in a little bit of a fill. And after this little bit of fill was done, light work, you know doing this little bit of scratch work by hand, and after it was done the grade was raised.

Q. Would the cross section stakes show the grade?

A. Yes.

Q. You didn't lose the work, did you, that you had done before the cross section stakes were changed?

A. This was work done for nothing.

Q. How far were they moved? Was the alignment moved?

A. Throw the line up the hill and raise it up.

Q. How far up the hill?

A. Oh, that point was raised—I couldn't tell you that point. Was pretty close together, and swings up again.

Q. Just outline to the Court how far the line, as actually built was away from these cross section stakes.

A. At that certain point right there, wasn't very much difference; was pretty close together; just the grade raised.

COURT: How did you lose the work on it already done?

A. After I graded this little bit of cut down, I put in this little bit of fill, which was completed ready for the railroad track. They raised the grade, and had to fill that out again.

COURT: You just put the fill right on top of that?

A. Yes.

COURT: The work still remained there; used the work already done, and put your work on top?

A. Here is this little cut. This little cut here I wouldn't have to take this work out at all.

COURT: You filled up the cut?

A. Yes, sir.

COURT: How much did that raise it?

A. Raised about between three and four feet, somewhere along there.

COURT: How long was this cut you had to fill?

A. Not very long.

Q. How long? 100 feet?

A. 200.

Q. How much work was lost by this change of the cross section stakes?

A. At that certain point not so very much; 200 feet.

Q. How much?

A. Had about twelve men there maybe one and a half or two days at most.

Q. You lost the work you say of twelve men for a day or a day and a half. Before you go further I want to ask you one more question. Back on the change before this last one you have talked about, you told the court that you had lost some work? You remember that?

A. Yes.

Q. If you were to go out over that roadbed today at that point could you see that grading that you lost; that is, would there be any signs of it? Do you understand what I mean. Suppose I didn't believe you, just for illustration; I went out there myself and looked for it today. Could I tell by looking at it that that work—you had done some grading?

A. I can pick you up a few points there, yes.

Q. Sir?

A. I can show you some grades, yes.

Q. When were you last over this?

A. About three days ago.

Q. This week?

A. Yes.

Q. And did you see that at that time?

A. Yes, sir.

Q. What evidences of that are there? How can you tell it?

A. Quite a work I did there, the grades; quite a grading I did there.

Q. I say you can still see some of it there?

A. Some of it, not all of it; I can show you some.

Q. Just go on with the rest of the changes.

A. This shows here, about four foot cut. The cut is quite a bit bigger than that; the cut must be about ten feet.

Q. I know, but was there a change made after the cross section stakes were put in that point? What point do you refer to?

A. No, no; that was no change after the cross section, this one point.

Q. What point is that?

A. Station 507 plus to about 510. Well, this cut, that line was thrown up, the change through all along, it was changed before it was cross sectioned.

Q. How far ahead of your work was that change?

A. That was all changed.

Q. Changed before you got there?

A. Yes. How do you mean before you got there?

COURT: Before you began work at that point.

A. Yes, before we began work.

Q. The only effect of that change, the only trouble it caused you was you had to do more work?

A. At these points I show you.

Q. Just had to do more work?

A. Yes.

Q. Just proceed and tell the Court.

COURT: Referring now to the points where the cross section stakes had been set by the defendant company, as this shows, and were then changed, that is what we are talking about now. Where they had already cross sectioned the proposed line, and after they had done so, they changed it and put in new cross section stakes, if there are any such places.

A. 515 to 524 I had some between those points.

COURT: Were the cross section stakes set there?

A. Set there and work done by hand, and trestle work up, not all of it; my bent was up, some stringer on it ready to lay the track on it.

COURT: And then?

A. The grade was lowered. I had to tear my trestle down and cut it down to fit the change.

Q. That was after the cross section stakes had been put in?

A. After the cross section stakes.

Q. You had extra work to do after that? How

much extra work did you have to do on account of that change?

A. One little cut here shows 200 feet. That cut would be all of 400 or 500. Average about two foot depth along there was taken out.

COURT: About two feet taken out by reason of the stakes being set?

A. Was taken out of the first cross section, and that material was put in the fill. Well, they backed up—only cut down the grade at the start about 514,—somewhere along there, maybe off a hundred feet; where we first started didn't make very much—didn't start very heavy on the start; that was on a dump. Little bit taken out of a dump, not very much, very little; made that cut again; already taken out.

Q. Can you tell the court, without going over it, about how many days work you lost so that you won't have to go all over it unless you want to?

A. Well, I want to be particular to tell the truth as near as I can about this.

Q. I haven't any objection to your going over it; I just thought to save time.

COURT: How many days work did it take to lower this grade?

A. Well, I was already with my shovel—the steam shovel was already to start to fill that trestle right away the next day.

MR. FREED: I don't think he understands you, your Honor.

Q. You say that after you had made the grade

according to the cross section stakes that the engineer of the defendant said to move such stakes?

A. Lowered the grade.

COURT: Lowered the grade about two feet.

A. In place where first started wasn't that much, and the deepest place about four or five, along in the deepest place.

COURT: And did you then lower the grade so as to make it conform to the new stakes?

A. Yes.

COURT: How long did it take you to do it?

A. Not very long; I put a good force on it.

COURT: How many men did it take to do the work?

A. Had steam shovel; every man I had.

COURT: How many men did you have?

A. Twenty or twenty-five; along in there.

COURT: Twenty or twenty-five men; and how long did it take to do that?

A. They worked all day.

COURT: One day?

A. Yes.

COURT: Did they do it all in one day?

A. Yes.

COURT: So there was one day's work for twenty or twenty-five men?

A. Yes, sir.

COURT: To bring the work down to the new grade?

A. Yes, and tied up the shovel men, the firemen

and the steam shovel engineer and the crane man, you can't work them.

Q. Why was the steam shovel idle?

A. When they changed the grade, was just getting ready to go on it, and when changed the grade, had to tear my trestle down.

COURT: And the steam shovel and crew were idle that day.

Q. Your steam shovel men worked on this change, didn't they?

A. Can't work them on it. Dump men—

Q. How many men remained idle that day?

A. Just on the shovel, the steam shovel.

Q. Three men remained idle?

A. Yes.

MR. DOBSON: And the shovel?

A. Just the engineer, the crane man and the fireman.

Q. You knew, didn't you, and now know the Whitney Company was paying your company \$1500 a month for the use of that outfit, didn't they? They paid you while it was idle, didn't they? They were supposed to pay you?

A. Supposed to pay.

Q. Now, the effect of this change was, it made you do more work. You had to—

A. Do more work, when the order was to cut the grade down.

Q. You had to just do more work, that is all?

A. Sure.

Q. That is all there was to that, wasn't it?

A. Had to do more work, certainly, and delaying you all the time.

Q. I will get to that in a minute, the delay. Will you go on up to the next change, and tell the court about it?

A. From 524 to 527, is that cut?

Q. Were the cross section stakes changed after they were once put in?

A. That cut?

Q. The change you refer to?

A. In that section I just gave you?

Q. Yes.

A. After they were put in the first time, yes, sir.

Q. Had you started to work on that?

A. Had done some hand work on that cut, both ends of it by hand.

Q. They moved it up the hill, moved the stakes up the hill—was that the change? What change did they make? You said they made a change.

A. There was a little change there, not so very much in that cut.

Q. What was it? You told Mr. Dobson what the change was.

A. In this cut?

Q. Yes, in these stations that you referred to there?

A. Stations? There was a change there. The grade was raised a little bit there, not very much. Was raised a little bit, not very much.

Q. What did that mean, Mr. Fobert, that your work was wasted that you had done?

A. Some of it, not very much; was some work done there by hand.

Q. How much, if you can remember that far back?

A. Well, I had a crew of men there for a long while. I don't remember just how much I did; not very much.

Q. Was it a big change or a little change?

A. Wasn't a big change, no not there.

Q. Did it make you do a little amount more work, or a big amount more?

A. Just a little amount at that point.

Q. All right, go to the other changes.

A. Cut 534 to 538.

Q. Cross section stakes were changed at that point?

A. Put in cross section stake there. Line been changed there. Higher cut from what the profile shows; cross section stakes were not changed. The cross section stakes stayed there. There was some in that cut by hand, some of it.

COURT: We are not concerned with that at this time.

Q. Now, what I want to know, Mr. Fobert, I want you to tell the Court which of those changes were made after the cross section stakes were put down, and which were made before? In other words, when the cross section stakes were first put down, was there a change after that?

A. Not at this point.

Q. Go on to the next one.

A. This little cut at 539 to 540 plus was done—that little cut was done by hand.

COURT: I know, but were the cross section stakes changed there? Had the defendant's engineer put in cross section stakes to which you were to work?

A. Yes, sir.

Q. And then changed them afterwards.

A. That was changed afterwards in this change up the hill.

COURT: Put in new cross section stakes?

A. They put in new cross section stakes, on the upper side. It was done; had to go through there and move it—

Q. That makes no difference. We don't care about that. What we want to know is whether or not, before this change was made the engineer had set cross section stakes on the old line, on the original line. I understand you to say they changed the line at that point.

A. It was changed before it was cross sectioned, your Honor. This little cut before it was taken out, it was changed; the cut was too light; it didn't make much—

COURT: It was taken out before the cross section stakes were set?

A. No, was cross sectioned, I say, and after that cut—little bit of cut here, five foot cut it shows here; that would be maybe two on both sides, maybe three, maybe flat there, maybe four on the upper side. Very flat place there. Well, we had to go through that—

went through that cut with steam shovels. Just ahead of the cut with steam shovel. This bank here was too dangerous for me to go on the edge of it, just two or three dippers of the shovel, went along and picked her up and swung her over to get by, and went in to the next cut from Station 542 to 556, along there.

Q. Were the cross section stakes changed after they had been put in at these points?

A. No, sir.

Q. No cross section stakes in when the change was made?

A. No cross sections; not to hurt me.

COURT: You did the work according to the cross section stakes which remained?

A. Yes, sir.

Q. When you went to move the shovel above, you had to do some extra work in order to get your shovel through?

A. About two or three minutes work with steam shovel, where would take a bunch of men a long time.

COURT: That was not because that change there made in the grade?

A. No, sir, from that point I went along with the shovel and cast the rest into the fill or place; where was no cut made for fill I just borrowed.

Q. Was any change made the rest of the way?

COURT: Any change made in the cross sections after cross sectioned beyond?

A. No.

Q. Now, Mr. Fobert, before the cross section stakes were put down, was the road located? You know what located means in engineering parlance?

A. Yes, sir.

Q. Was the roadbed located before the cross section stakes were put down?

A. Had to be; they couldn't put the cross section stakes down without it.

Q. Let me ask you this. When did you get your ideas about where the fills would be, and the cuts would be? Did you get it from this profile?

A. I will say this profile was no good for the work we done.

Q. This profile would not show?

A. Not on that work up there; no good for that work.

Q. Why?

A. Just give you this for the station.

Q. Why?

A. It was changed, the line was changed.

Q. I am asking you, after looking at that profile you have right there, looking at that paper at say Station 510—could you tell where that line was going to be?

COURT: Could you take that profile and go out along the line, and trace the line from the profile?

A. This profile?

COURT: Yes.

A. Yes, sir.

Q. Could you tell how far up the hill, by looking at that profile the line was to be?

A. How far they threw it?

Q. Let me take this one case. Take Station 510, I don't know anything about what is there, but take at Station 510. Suppose you would have gone to Station 510 before the cross section stakes were put in—you understand what I mean?

A. Before—

Q. Before the cross section stakes were put in at Station 510, suppose you had gone and stood there, could you have told where the line was to have run?

A. Yes.

Q. How could you have told? As I understand that profile is only projected at that point.

A. Yes, sir, it is.

Q. What's the good of any locating? What's the difference between projection and location then? You understand the words?

A. Yes, sir.

Q. What's the difference between a profile at these points and way back the first two or three miles, or the first four or five miles?

A. Well, they followed the first work, and after there they didn't. The profile is no good.

Q. I am asking you is there any difference in the profile? Don't you call this altered grade all along here, about which you told the judge, only projected?

A. I told you all along the profile the same thing. The little cuts or the big cuts.

Q. You don't understand me, Mr. Fobert. This

is only a projected line on the profile, isn't it? That is not a located line, is it?

A. Supposed to be.

Q. Is that located location there at Sam Down's Creek. Turn to Sam Down's Creek on that.

A. I am going down to where the work is done exactly by that profile?

Q. No, turn to Sam Down's Creek, and I will explain what I mean. I don't want to confuse you. Now, this profile is the same on this side of Sam Down's Creek as it is on that? Same kind of a profile?

A. Well, this profile, they don't show the profile—they don't show on the profile when they changed their grade.

Q. I am not talking about whether they made a change or not. You know what a projection is, don't you?

A. When we project, this isn't the real profile on the work.

Q. Let me ask you this. Could you take that profile at Station, say, 510, knowing in a general way where the road was to run, and the station there, and say to me, "Freed, that roadbed is to be five feet from the top of that hill"? Here is the hill.

A. No, no. Yes, I get you now, yes.

Q. Could you?

A. I could a portion of the road—

Q. No, I am asking you, could you do it?

A. Yes, sir.

Q. Tell us how.

A. I won't say I get every point.

Q. Just give the Court an illustration.

MR. DOBSON: He asked about 510; just go to 510.

MR. FREED: I am not bound by 510.

MR. DOBSON: Just the one mentioned.

A. Now, here is—this profile shows a cut here, your Honor. About fourteen feet of a cut. The work we done showed no cut. The grade hits the top of that and these cuts are there, bigger than what they show.

COURT: That doesn't answer counsel's question.

Q. I mean, Mr. Fobert—just to relieve your mind—I am not trying to say that the work as done follows this profile. We are not asking that.

A. No, can't follow the profile. That is your profile when the engineer puts that stake down and marks on it.

Q. I am asking you, could you go out there and, taking this profile in your hand, without taking a surveying outfit, or something of that kind, could you say this shows that the line ought to run right about along a line five feet from the top of that hill?

A. You could, yes, sir.

Q. How could you tell that? That is remarkable to me.

A. Because I could tell you; not all over it.

Q. What shows it on the map to you? Take any place. Tell the court what shows it to you. I don't believe he understands my question.

A. No, I don't.

COURT: I suppose this is alongside the hill. This is located alongside a hill or mountain?

A. Yes, sir.

COURT: Now, down here we will say is the foot of the mountain, the river, or whatever it is. Up here is the top of the mountain. Now, can you tell by looking at this, this paper, just how far up the mountain and at what point on the side of the mountain this road is located?

A. Pretty close to it; not all along; not all over. I can take up a good many points, yes. I was on that work every day.

COURT: We are not talking about the work. Suppose you were not on the work, but wanted to bid on the work, and you took this profile and went up there and looked at it.

A. I understand that grade from A to Z, your Honor.

COURT: Before you know where the road is to be located, you have to wait until the engineer sets the grade stakes.

A. I understand this profile better than try to explain it.

Q. We are not saying you don't know all about it, but that is not my question. I want you to tell from this. It is my understanding that a profile map shows you what you have to take out at a point, and what you have to put in at a point, but does not show you, just looking at the profile, whether or not it is half-way up the side of the mountain, running

along, or down within ten feet of the bottom of the mountain. Now, I want to see what you say about the matter.

A. It don't show—the location don't show—

Q. This profile doesn't show the location, is what I mean to say, does it?

A. It should.

Q. What part of it?

A. Doesn't it show this cut here? Don't it show the fill?

COURT: You don't know whether this cut is a hundred feet up the mountain, or two hundred feet or five hundred feet.

A. I see what you are getting at by location. I got to know where.

COURT: If you see some contour at the side of the mountain that you think would just about require that depth of cut and that depth of fill, you say—

A. I hit you pretty close. Been over, and been at that kind of work all my life, you see.

MR. GEARIN: Not from the paper.

A. You have to have the paper to get the station number.

Q. What I mean is, you have to be on the ground with this?

A. Yes, sir.

Q. Did you go over this part of the road before the contract was let?

A. Not all of it; didn't go over it all; didn't go over that at all.

Q. That first visit that you and Mr. Glavin, I

think, and Mr. Cole went out, did you go over this part of the roadbed we have been talking about these changes in? Did you go over that part? Did you and Mr. Glavin and Mr. Cole visit that part of the roadbed?

A. That placed part of it?

Q. No, the part of the roadbed in which these changes were made that you spoke of?

A. No, I didn't know anything about those changes.

Q. You said there that you went out there on that work a few days after the contract was let for the purpose of laying out the work; went out with Mr. Glavin?

A. And Mr. Crook and myself.

COURT: And Mr. Cole.

A. And Mr. Cole.

COURT: And you went up the line a certain distance?

A. Just to get a start. Didn't go very far.

COURT: How far up the line did you go? About how many miles?

A. I started from where we covered ground in the first grade.

COURT: What?

A. You just want to know how far I was up the line?

COURT: Yes, what was the furthest station you got to?

A. Sam Down's.

COURT: Did you cross that river you spoke of?

A. Kilches, yes; crossed over a foot bridge.

COURT: How far up did you go above that?

A. Went up to Sam Down's Creek.

Q. What station?

A. 380, along there, 390; that is it, 390.

COURT: That is as far up as you went?

A. Yes.

Q. Now, when you first went down there on the job, you understood, didn't you, that the Whitney Company's chief engineer had the right to make certain changes in the alignment of his roadbed, didn't you?

A. Yes, sir; or any right.

Q. I am not speaking of your idea, that an engineer has absolute authority.

A. He has.

Q. I understand that, but did you know when you went up on this contract—had you ever had it read to you?

A. Not very much; I didn't pay much attention to the contract.

Q. Did you know that in this contract it was stated that the chief engineer of the Whitney Company could make changes? Did you know that?

A. Could make changes?

Q. Could change the alignment.

A. Why, yes, they can do that anyhow.

Q. Didn't you know that this territory through which these changes were made that you speak of—you knew that the roadbed was running on the side of the hill, didn't you?

A. Yes, sir.

Q. You knew, therefore, that a slight change throwing the line up the hill a few feet, or down the hill a few feet, would make quite a bit of change as to cuts and fills, didn't you?

A. No.

Q. I mean you would know that as an engineer, or superintendent, whatever you were.

A. Different way you can throw that line, make it heavy or light.

Q. I understand, but I say a slight change in the alignment throwing it up or down, if on the side of a hill, a slight change would make more difference than it would if it were on the level ground, wouldn't it?

A. Yes, sir.

Q. You understand what I mean?

A. I understand that part.

Q. That is, if the roadbed is running along level ground, and you have merely got to throw up dirt, you know, to make a bank or to take out a little hill, if you throw over to the right or left a little piece, that doesn't make very much difference, but if you are on the side of a hill, where there are ravines, cuts and fills along there, throwing out the line a few feet, can make quite a difference.

A. Increase, certainly. Double; heavy; you can throw that line either way, can make it cast work or thorough cut work.

Q. You understood that all the time?

A. I knew that could be done.

Q. You understood that with reference to this job?

A. I seen it there; I seen it down there.

Q. Mr. Fobert, you knew that up along the sixth, seventh and eighth mile, and beyond along the ninth mile, somewhere in that territory or all that territory you were running,—your road was to run on the hillside, didn't you?

A. Was to run on the hillside first location?

Q. Yes.

A. Yes, sir.

Q. Would be in there some place, first, last or any location?

A. Should make as light work as possible.

Q. Therefore you would know, or should know, that if they threw the line up the hill four or five or six feet—you understand?

A. Yes.

Q. Further than was originally intended?

A. Yes.

Q. I said—that would make quite a bit of change in the material to be moved and work to be done?

A. Yes.

Q. And if you threw it down the hill, that would change it the same way?—whether thrown up or down; it would make a change, one of them would make less and one make more, probably?

A. I rather have it go down. Better work and lighter, get through quicker.

Q. But you realize that a slight change in the

line of the road, the alignment, would make quite a bit of change in the amount of material to be moved, didn't you?

A. Awful difference; whole lot of heavy work.

Q. Now, as a matter of fact, do you know how much additional work was done throughout this territory in which all these changes have been made you have been telling the court about?

MR. FREED: Has he figures?

MR. DOBSON: No, he doesn't know.

A. I didn't keep track of it; it wasn't my part of the work. I was up there to do that work as quick as possible. I didn't keep track.

Q. You have told the Court from time to time when Mr. Dobson was questioning you that made so much more work. Isn't there any way, and haven't you any records that you can refer to, and just tell us how much was added to the cost on account of those changes?

A. I haven't got it.

Q. Have you any idea?

A. I have no idea. I am farming; been farming two years, and I quit the business. You expect me to carry—

MR. FREED: But Mr. Dobson, he has told the Court about this increase.

MR. DOBSON: He just gave approximate.

A. That isn't my part. Even when we go, that isn't my part.

MR. DOBSON: He was just to give the Court some idea about the time consumed.

MR. FREED: Is there any record he can refer to and give the Court the amount of money that was added to it?

MR. DOBSON: We will have a report on each mile.

Whereupon proceedings herein were adjourned until tomorrow morning at 10 o'clock.

Portland, Ore., Friday, Oct. 26, 1923, 10 A. M.
ALEC FOBERT resumes the stand.

CROSS EXAMINATION
(Continued)

Questions by MR. FREED:

Q. Mr. Fobert, you said that at Station 434—you have turned to that have you?

A. Yes, sir.

Q. Now, at that point you said that there was a change made after the cross section stakes had been put in didn't you?

A. Just that one point?

Q. That is about 434, isn't it, right there?

A. That is where the change starts from.

Q. Referring to the cuts and fills shows between 435 and 440 didn't you say that the change was made or a change was made after the cross section stakes had been put in the ground?

A. From that point to point 445 or 446 along there, yes, sir.

Q. Are you sure that this change particularly as affecting these cuts and fills between 430 and 440 was made after the cross section stakes were put in?

A. What do you mean by affecting?

COURT: The change made after the cross section stakes were put in; as to those you referred to along the line, the changes?

A. Yes, sir.

Q. Now, in talking about stations that touched between Stations 430 and 440—had anything to do with them—any changes between 430 and 440?

A. Affect the station?

Q. Look at this profile. Were any changes made between 430 and 440?

A. Yes, sir.

Q. After the cross section stakes were put in, were the cross section stakes taken up and moved between those two stations?

A. Picked up and moved.

COURT: Had the surveyor or engineer put in cross section stakes for his work before the change?

A. The change was made.

COURT: We understand where the change was made now. What we want to know is whether the cross section stakes had been put in by the engineer before the change?

A. Yes, sir.

Q. Now, you are sure of that, are you?

A. Yes, sir.

Q. Now, Mr. Fobert, how do you remember those changes, that you have told the Court about yesterday and this one this morning?

A. This cut over here, your Honor—

Q. No, all of them. How do you remember the

changes? What makes you remember them? Looking at this map, this profile, does that recall them to you?

A. No, I could tell you without looking at that profile at all; get the number and the distance; I have to have the profile to keep it all in my head.

Q. I don't believe you mean to answer no to that. You have told the Court, for instance, that there was a change between 430 and 440?

A. Yes, sir.

Q. Now, I want to know, how do you remember there was a change at that point?

A. There was some work already done, but hadn't been completed.

Q. How do you remember that?

A. By me being on the work and doing the work.

Q. That is,—this was done in 1920?

A. Yes, sir.

Q. In the early part of 1920?

A. Yes, sir.

Q. And you still remember that far back?

A. Yes, sir.

Q. And you remember well all those fills you have told the Court about?

A. Yes, sir.

Q. Since this time that you did this work for the Whitney Company?

A. Yes, sir.

Q. You have done a great deal of other work, haven't you? You have been on other jobs?

A. No, sir.

Q. That was the last?

A. That was the last.

Q. The last job you were on?

A. Just a minute; I want to be sure about this. After I was there with the company, you mean have I done any other work?

A. Yes.

A. No, that was my last work.

Q. Did you ever see a map showing the roadbed as it is today?

A. No, sir.

Q. And never saw a map showing the roadbed as it was built?

A. No, sir.

Q. That is the same as today?

A. No, sir.

Q. Well, then do you want to tell the Court that between Stations 430 and 440, while the profile shows certain cuts, you understand, and certain fills.

A. Yes, sir.

Q. In fact, in doing the work you made certain cuts and certain fills?

A. Yes, sir.

Q. This is purely from your memory. You just remember what you did?

A. Yes, sir; that is what I said.

Q. Why were those changes made that you spoke of?

A. That is up to the engineer.

Q. Do you know why he made them?

A. He didn't tell me why he made them.

Q. He didn't speak to you about the reason for any change that he made?

A. No, sir, not that I remember.

Q. He just told you to change them?

A. He didn't have to tell me.

Q. By making the changes that you have spoken of, didn't they at any time make the work less?

A. Always made more work.

Q. They never made a change that made less work for you?

A. Have made some; little bit.

Q. But very little of it were changes that lessened the work? Most of the changes made more work?

A. Made more work.

Q. That is what you mean to say?

A. Yes.

Q. What did those changes do to the line? Did they straighten out the line?

A. Made a better line.

Q. Better for what?

A. Made better railroad.

Q. If the line had been put in just where you say you thought it was going to be put in, and not thrown up the hill, in some of those places, could you have made the fills stick there?

A. Places? Yes, most places.

Q. Were there any places where the railroad was thrown up the hill that, if it hadn't been thrown up the hill and left where you thought it was going to

be, you couldn't have made the fill—do you understand what I mean?

A. Yes, sir.

Q. Were there any such places?

A. Through such places.

Q. How many such places were there?

A. Oh, I couldn't tell you all of them.

Q. There were places of that kind?

A. Yes.

Q. And it was necessary therefore in those cases for the roadbed to be pushed up the hill a little, wasn't it?

A. Yes, sir.

Q. You understand that?

A. I understood; understand they did, yes, sir.

Q. I mean you understood why it had to be pushed up the hill at those places?

A. Yes, sir.

Q. How many such places can you remember?

A. I can remember some of them.

Q. Isn't it a fact that in a good many of those cases those changes that you speak of, of the roadbed being pushed up the hill a few feet from what you expected, that the purpose of that was to make a roadbed that would stick; that is, where the fill which you threw in would stick?

A. Yes sir.

Q. You told the court yesterday that some of the additional work that you had to do was caused by the Whitney Company's engineer directing you to fill up a fill, or to make a fill, I should say, put dirt

in there instead of putting a bridge across—that is right, isn't it?

A. Yes sir.

Q. Isn't it a fact that if the Whitney Company had gone ahead and had bridges put in there by whoever was doing that work, instead of having you fill in there, that you would have been delayed? Is that too long a question? Do you understand? Let me ask you before you answer: Didn't that lessen the work? Didn't that get you ahead quicker by the Whitney Company telling you to fill up this gap here instead of waiting until they had the bridge built?

A. The fill that—they had to build a trestle to fill it.

Q. But would you have been able to go ahead beyond that place more quickly if the Whitney Company had said to allow them to build a bridge there?

A. Yes sir.

Q. Wouldn't you have been delayed by the building of a bridge there?

A. I would have built it ahead before the shovel got there.

Q. What?

A. The bridge would have to be built ahead before the shovel got there so wouldn't have to be delayed.

Q. That is the way you would like to have it done?

A. That is the way it has to be done; no other way to do it.

Q. Was it done?

A. Was done when the shovel got there to fill, because the track is there already, and the fill is already.

Q. You don't understand what I mean. I understand you, or one of the witnesses that was on the stand before you were, to say that you had been delayed in places because the bridges which were to be put in had not been completed?

A. Yes sir.

Q. That is a fact?

A. At two places.

Q. You heard Mr. Glavin, or some one—

MR. DOBSON: You don't mind a distinction between bridges and trestles.

I am talking about bridges; that is a fact, isn't it?

A. Bridges. Not at this point you are talking about; bridges down at Down's and Clear Creek across the river; those are bridges. The rest of them, they don't call them bridges.

Q. Who built the trestles? Not the temporary but the permanent trestles when put in, who built them?

A. Shea-Parker.

Q. That was not part of your grading contract?

A. Wasn't grading contract, no, sir.

Q. Sir?

A. No, not that I know.

Q. Were you ever delayed by Shea-Parker in getting the trestles in in time?

A. Yes sir.

Q. Shea & Parker tried to do the best they could, didn't they?

A. You bet, yes sir.

Q. It was because of the conditions that existed. You know what I mean by conditions?

A. Yes sir.

Q. That they were not able to get these trestles in always ahead of you, wasn't it?

A. Yes sir.

Q. You told the court yesterday that in some places, where you expected that a trestle would be built, a change was made and you had to make a fill there. That is a fact, isn't it? I mean, that is what you said?

A. Where a trestle was to be built?

Q. Were some places where the profiles showed a trestle, when you got there the Whitney Company's engineer said he wanted you to make a fill there—he didn't want a trestle?

A. Yes sir.

Q. That is so?

A. Yes, sir.

Q. Now, I am asking you whether or not because they made you fill that place you were delayed any?

A. Well, we were bound to be delayed.

Q. Wouldn't you have been delayed by Shea & Parker not getting their trestles finished? You don't understand.

A. Shea & Parker didn't put in this trestle work. I put them in myself. You are jumping in a different place altogether.

Q. No, you told the Court that you thought a permanent trestle was to be put in at a certain place, didn't you, and when you got there you were ordered to fill that gap instead of the Whitney Company putting in a trestle?

A. Show me the place.

Q. You will have to show me.

A. You started one bridge, then you drop that and go to another place where they cut out a trestle and put in a fill. If you talk about Clear Creek bridge or Sam Down's Creek stay with it, and I can answer it.

Q. Let me tell you this: I don't want to confuse you. In some places, or in some place, you told the Court at some point that that roadbed or profile showed that a permanent trestle was to be put in, but when you got there you were told by the Whitney Company's engineer to make a fill at that point; is that a fact?

A. Just explain that again.

COURT: You testified yesterday that at certain places on the line a trestle was cut out and a fill substituted?

A. Yes sir.

COURT: That is what he is asking you.

Q. Turn to some point on there where that was done.

A. Here is what it shows.

Q. This is the cut left at 450, isn't it?

A. Yes, that is right.

Q. Now, you say that you thought at that point, about 448 there was to be a trestle?

A. Trestle. Marked there trestle, you see.

Q. But you were ordered by the Whitney Company's chief engineer to fill that place.

A. Yes, sir.

Q. Now, you understand that?

A. I understand it.

Q. Suppose the roadbed had been built just according to what you say this profile showed. Who would have built that trestle there?

A. Across these fills here?

Q. Yes.

A. If it was built according to this profile?

Q. Yes.

A. Shea & Parker.

Q. That wouldn't have been part of your work? That is what I mean.

A. It wouldn't have been part of my work.

Q. Shea & Parker built other trestles on this work, didn't they?

A. They built across the river and at Clear Creek and Sam Down's.

Q. They built only bridges, no trestles?

A. They built a temporary trestle at the end of it to connect—they run their temporary trestles—they cut out some of this trestle. They made a fill so that didn't make the trestle as this profile called for. I drove some temporary, just rough, picked up anything rough for me to get across with the shovel and

borrow the material and fill instead of having such a long trestle.

MR. FREED: I won't go any farther, your Honor. He doesn't understand this.

Q. Now, I am asking you, were you ever delayed by not having one of these trestles built, the bridge built ahead of you?

A. Was delayed at both of these bridges.

Q. Were delayed?

A. Was delayed at both of these bridges.

COURT: What bridge do you mean?

A. Clear Creek and Sam Down's.

Q. Then do you think that you would have been delayed at this point, 448 you spoke of; do you think you would have been delayed at that point if the road-bed had been completed just like this profile shows?

A. I would have went ahead and got that fixed and got across with the shovel; would have got up the hill.

Q. If they had required Shea & Parker to put in a trestle do you think you would have been delayed at that point?

A. If the trestle had been—would have been no trestle—what do you mean? When I got to that point you mean if the trestle wasn't there? Is that it?

Q. Yes.

A. I would have went ahead and had it fixed so could have got across before the shovel got there; would have had it laid.

Q. You would have got it fixed so as to get across; put in temporary trestle?

A. About seventy-five feet up the hill from that bridge; wouldn't have been over eight to ten foot fill; I would have dug around with the shovel, or would have made what they call a shoo-fly, you go around to save building such a big trestle; would have went up the hill farther, so I would have had to put in a couple of bents—some bents; temporary. Some plank I had to put in. I had to put in my own trestle in all those fills to dump material.

Q. Then you would have had to put in temporary trestle just the same as you did to make the fill?

A. Just the same—stronger.

Q. You would have had to put in a stronger trestle?

A. Required a little stronger for the shovel; I can show you the point where we did that.

Q. I won't ask you about that. Now, when was this work done? What time of the year was this work along the line where these changes were made? Will you tell the Court about what time?

A. I couldn't answer. I didn't keep track of it.

Q. Well, do you know whether the work was done——

A. I couldn't tell you the time.

COURT: Was it in the summer or winter?

A. Summer.

Q. You therefore did it under very favorable weather conditions, didn't you?

A. Yes, sir.

Q. Now, Mr. Fobert, if this roadbed had been

built just exactly like you expected it would be built——

A. Certainly it would.

Q. Just a second; I haven't asked the question yet. If this roadbed had been built—if Mr. Norris had told you to build it just exactly like you thought it was going to be built, would it have been finished by January 1, 1920?

A. Not by Mr. Norris, because he got on the work——

Q. Norris or Cole or anybody. Suppose you had built the road exactly like you thought it was going to be built, would you have finished it by January 1, 1920?

A. Yes, sir.

Q. What is a good day's work for a steam shovel in excavating?

A. It depends on the size cut and the material handled.

Q. Taking a good day for a steam shovel under good conditions?

A. The capacity of the shovel we had was 3500 yards a day.

Q. You didn't do 3500 yards a day, did you?

A. No, sir.

Q. What is an average day for the materials along the roadbed, as you thought it was going to be built?

A. What do you mean? Load in small cars or cast?

Q. I am talking about the most favorable condi-

tions; I don't care which they are. What do you think your steam shovel could have averaged a day along the roadbed if it had been built just as you thought it was going to be built? How many yards could it have averaged a day?

A. Loading cars or casting? There is a difference, you know.

Q. Just like you thought it was going to be built; if you thought it was going to be casting, let's take casting; if you thought it was going to be loaded in cars, let's take loading.

A. Some days casting with shovel will move a thousand yards; some other days will move three thousand yards; all depends on how big the cast was.

Q. Let me put it this way: You were down there on the job with Mr. Cole and Mr. Glavin?

A. Yes, sir.

Q. That is early in say July and August, 1919; when you made that first trip down there I mean.

A. Before the outfit was down there; went down there to meet Mr. Cole and tell Mr. Cole and Mr. Glavin when to start work.

Q. Did you at that time make any figures, or did you try to estimate? Do you know what estimate means—calculate?

A. Calculate on the work; that is what I was there for.

Q. Did you try to calculate?

MR. DOBSON: He doesn't understand that word.

MR. FREED: He said he did.

MR. DOBSON: His answer showed he didn't understand it.

A. I went down there for——

Q. I know what you went down there for. Do you understand what the word estimate means?

A. I didn't handle that grade——

Q. No, no, do you understand what the word estimate means?

A. Estimate, yes.

Q. Did you on that trip you have told about estimate how many yards you expected your shovel to move each day?

A. No, sir.

Q. You didn't think about that at all, did you?

A. Didn't go down there for that purpose at all.

Q. How do you know then that you could have finished that work by January 1, 1920? I just want to get your reason; I am not trying to confuse you.

A. Knew the yardage the profile showed.

Q. Suppose the profile shows—what does it show?

A. I don't remember just now.

Q. Suppose it says 150,000 yards of excavation—I believe that is about what it shows.

A. Some were along there.

Q. Suppose it shows 150,00 yards——

MR. DOBSON: As a matter of fact it doesn't; the whole yardage on the whole line would be 150,000; not the steam shovel.

Q. I don't care about the 150,000 yards. I will stand on that. If it had shown, if the profile showed

150,000 yards of excavation to be done on this twelve-and-a-half mile railroad. You started in your excavation about August 1st, didn't you?

A. Somewhere along there.

Q. Did you expect to move 150,000 yards of dirt by January 1st?

A. Yes, sir.

Q. Well, now that is four months.

A. Yes, sir.

Q. You expected to do that with that steam shovel and that crew?

A. Yes, sir.

A. That would average over six thousand yards a day?

A. Yes.

Q. Do you think you could average over a thousand yards a day?

A. What do you mean, every day?

Q. With your shovel and with your crew you had down there?

A. I could have put in enough crew to do it.

Q. With the crew you had on the job? Of course you could have put enough men in there to dig the Panama Canal in that time, but with the men you had in there and with that shovel?

A. What time now? I wasn't there the first part of the work.

COURT: In four months.

A. Could put in with a crew.

Q. Then you would say that if you did only nine miles of work by October, 1920, which is a fact——

A. Yes.

Q. That is nine months after January 1st?

A. Yes.

Q. That you were delayed nine months?

A. Yes.

Q. Where was all that delay?

A. First beginning the work.

Q. How much did that delay you?

A. Along three months.

Q. Sir.

A. Around three months, that first part; short distance there.

Q. But as I understand, you expected to use another method of excavating there—other than the steam shovel?

A. Yes.

Q. You expected to have men and horses?

A. Yes.

Q. All that first month delayed you at the beginning was with your steam shovel, wasn't it?

A. Yes, take a shovel and do that work instead of the way we had it planned first time.

Q. How long was the steam shovel delayed? How long did you keep the steam shovel down there at 17?

A. I couldn't tell you exactly; it was kept there all summer or fall.

Q. It didn't start until August 1st.

A. August 1st.

Q. Then you are prepared to tell the Court that that went on at the start—that you kept the steam shovel down there?

A. I didnt' keep it down there; don't get that in your head. I wasn't on the work at the time.

Q. How do you know then that this delayed you that much?

A. The records show.

Q. You are going then by what somebody told you; what Mr. Glavin told you?

A. No, I don't have to go by that.

Q. Maybe you don't understand me. You say that you had only nine miles of roadbed built by October 1, 1920?

A. Yes.

Q. So that you were delayed, that is that is the principal reason. I understand you have other reasons. So that you were delayed at the beginning of the work?

A. Yes, sir.

Q. Did Mr. Cole or Mr. Norris, whoever it was had you do the steam shovel work at the beginning of the line as you didn't expect to do it——

A. Not Mr. Norris, Mr. Cole.

Q. All right, Mr. Cole had you do it. Now, I ask you how you could figure——

A. Just a minute; you said for me. I went down there to start the work; get the work lined up to start. Told Mr. Cole, "Here is Mr. Glavin coming up to superintendent the work." It was up to Mr. Cole

and Mr. Glavin. I can't tell you all the details about the work.

Q. It is shown and you told the judge——

A. Not on that piece of work; I am telling the truth. I am up here to tell the truth.

Q. Now, Mr. Fobert, how did you estimate that this piece of work could be finished by January 1, 1920?

A. I have done the same work in that short time—whole lot bigger work than what that work was.

Q. Did you estimate that? Did you and Mr. Glavin or you and Mr. Fobert get together and estimate by looking at the profile, or looking at the ground, that you could finish it by January 1, 1920?

A. Yes, sir.

Q. Who did that with you? You and who?

A. My partner, Mr. Rajotte; Mr. Glavin.

Q. When did you do that?

A. Before we started to work.

Q. Before the contract was signed?

A. Around there.

Q. What figures did you have before you? Did you have that profile before you?

A. Rajotte had.

Q. No, I am asking you; did you see that profile then?

A. I saw the profile the day I went down there.

Q. No, I am talking about before you went down there.

A. I saw the profile in the Portland Hotel here.

Q. Did you go over it and unroll it and examine the whole profile?

A. Yes, sir.

Q. Did you have the figures added up before you; somebody have the figures to show you what they added up?

A. I seen the figures but I don't remember them now.

Q. I mean were they called to your attention at that time?

A. Yes, sir.

Q. Had anybody who was in that conference with you at the Portland Hotel been over the ground?

A. No.

Q. They had not?

A. No.

Q. Then any estimate that you made at that time was made from this profile?

A. At that time, yes, sir.

Q. And that was the only time that you made an estimate before the contract was signed?

A. That was the first time; not the only time, but the first time.

Q. Did you do it again before the contract was signed?

A. No, that is just about the time the contract was signed.

Q. And you knew, as you told the Court yesterday, that a slight change in the alignment of this

roadbed where it ran along the side of a hill might make a great deal of change in the amount of material to be moved?

A. Change in it? The engineer has got that privilege to change the work at any time.

Q. But you knew in looking at that profile when you were at the Portland Hotel, that a slight change in the alignment—you know what alignment means?

A. Yes, sir.

Q. In the part of the roadbed where it ran along a hillside——

A. Yes, sir.

Q. Might make a great deal of change in how much work you had to do? Didn't you know that?

A. You can make a change to lessen the work or can make a change to make more work; you could do either one.

Q. You knew that at that time?

A. Anybody knew that.

Q. In these conferences you spoke of at the Portland Hotel—you know what I mean by conferences—you and Mr. Rajotte and Mr. Glavin.

A. Mr. Rajotte was not there at that time; Mr. Rajotte was here.

Q. Who was there?

A. Mr. Winters, Mr. Crook and Mr. Glavin.

Q. Mr. Winters is a member of this firm?

A. Yes.

Q. And Mr. Glavin is the superintendent?

A. Yes.

Q. And Mr. Crook is one of your workmen?

A. One of our superintendents.

Q. Was it ever talked about at that meeting that you spoke of that there could be changes made?

A. They didn't talk about making changes; looked at the profile and figured the yardage there on the profile.

Q. You therefore made the estimate at that time based on the profile without any changes?

A. Yes, sir.

Q. And you understood, you say, that slight changes in the alignment might make a great deal of difference or change in the yardage?

A. Yes, sir.

Q. If this work had been finished by January 1st, wouldn't you have had three months of work in wet weather? Didn't it start raining October 1st.

A. Yes.

Q. You would have had October, November and December in the rainy season?

A. Yes, sir.

Q. You figured on doing the work during the rainy season, didn't you?

A. Figured? Yes, sir.

Q. You knew you would have to do the work in the rainy season?

A. Yes, sir.

Q. Can't you make better progress in the dry summer than you can in the wet fall and winter? You can get along faster in the dry summer than you can in the wet winter, can't you.

A. The upper end of that work along the side

where cast the material was better, and some rock in the material, in the dirt, and it was all cast, figured was all cast and the rain wouldn't bother that work.

Q. How did you figure that? You hadn't been over that ground when you had the conference at the Portland Hotel; you hadn't been over the ground?

A. My partner had been over the ground.

Q. And he told you at that time that the upper part of the work could be done easily in the winter?

A. He told me the upper part of the work was very steep sides; understood it was very steep.

Q. He understood it was very steep?

A. Very steep sides.

Q. Did he say he had seen it?

A. I don't remember whether he said that or not, now; I couldn't tell you.

Q. Now, Mr. Fobert, I understand you to say that if the Whitney Company had stuck to this profile, if its engineer had had you follow that profile, your work would have been hastened, quickened?

A. If they would increase the yardage——

Q. No; if they followed that profile, had it built exactly like that profile, you would have gotten done much more quickly.

MR. DOBSON: I don't think he said that.

MR. FREED: He didn't say it in words, but he said the delay was caused by their leaving this profile.

A. No, sir, I didn't say that.

Q. You think if they had stuck to this profile they wouldn't have gotten along any faster?

A. Sure would have gotten along faster; not so much yardage in that. If the steam shovel makes a thousand yards a day and only had ten thousand yards to move, and you change that to twenty thousand, and she moves the same capacity every day, you cut it in two, wouldn't you?

Q. Until the grade stakes are put in, Mr. Fobert, the contractor doesn't know what he has to do on that job, does he?

A. Build before the cross section?

Q. Before the cross section stakes are put in, I just want you to tell the Court, has the contractor a right to believe—before the cross section stakes are put in the ground—you don't know what the grades are going to be, do you?

A. In places you know, in other places you don't.

Q. How do you know in places?

A. I have reference to light work, which shows exactly what it is, over the ground in particular.

Q. Sir?

A. On light work, where they locate on light work; they usually locate light work pretty close; big work they can't locate so close. You can build that just on the profile, just exactly the way the profile shows.

Q. Then I understand you to say that neither you nor anybody else can tell just what the work is going to be there, until the engineers—and the engineers can't tell until he goes down and locates these stakes?

A. He can't tell right to the yardage, he can tell pretty closely.

Q. That is on light work. On these big cuts and fills, what about that

A. He can tell on big cuts; all depends the conditions the cut is, sinking your cut.

Q. Were you able to tell before the cross section stakes were put in what you would have to do?

A. Know what we had to do in the cemetery cut, first big cut.

Q. I am talking about all that.

A. That first part of the work, could tell every bit of it.

Q. What good are cross section stakes? Why do they put them in?

A. You have a bunch of men, you can't be with them all the time, every man. You put in cross section and you put in a stake on each side and in the middle; that line is run here. They mark it fill or cut, whatever it is, and they will put a stake on the side where the slope runs, and where the slope down runs out, so you won't put any more material than it calls for.

Q. You understood, when you were on the job down there, didn't you, that you were to wait and see where Mr. Norris put in his cross section stakes?

A. Well, Cole was working down there, not Norris.

A. All right, Mr. Cole, then. I am not on anybody's work; I am on the whole line.

COURT: You couldn't build this road without cross section stakes, could you?

A. No, sir.

REDIRECT EXAMINATION.

Questions by Mr. Dobson: Mr. Fobert, I want to ask you this: Could you go down on this work that Mr. Freed has been talking to you about and make an estimate of what it would cost to construct that roadbed or build the roadbed before the stakes had been put in the ground?

A. I can make a rough estimate of it?

Q. And how long have you been in this business, did you say?

A. Ever since 1897.

Q. Now, is it customary to have stakes in the ground when you go out and look at a piece of work and make your bids? Are they always in the ground when you make your bid?

A. When we make it?

Q. When you make the bid; when you consider whether or not you are going to do the work?

A. Yes.

Q. You mean to say you go out on the work always and always find stakes when you go out and look at the work?

A. Yes, sir.

Q. Before you bid on it. Do you understand my question?

A. Yes, sir; the location stakes.

Q. Just the location stakes?

A. Location stakes.

Q. What is the difference between location stakes and cross section stakes?

A. Location stakes is to locate the work.

Q. Listen—let's get it plain. Isn't the location stake merely to indicate the center line of the railroad?

A. Proposed center line of the railroad.

Q. Let me ask this to get it straight: Would you find what we call cross section stakes or slope stakes at the time you went out merely to bid on the work?

A. No, sir; no slope stakes.

Q. When are these cross section stakes usually put in the ground?

A. Cross section stakes put in the ground after the right of way is cleared.

Q. That is after the actual work of building the railroad commences, is it not?

A. Yes, sir.

Q. Now, Mr. Fobert, it is not necessary, as I understand it, to have cross section stakes in the ground to make your bid; is that true? In other words, you don't have to have these cross section stakes in the ground out there to make the bid. Do you know what I mean by making a bid?

COURT: When you make the contract for building the railroad.

Q. You decide how much you are going to ask the owners here, the Whitney Company, to build that road; you don't have to have stakes in the ground to tell you that, do you?

A. No, I don't have to have.

Q. That is when you make bid or estimate what you are going to do it for?

A. No, you don't have; it can't be done. That is not a thing that can be done.

Q. Now, Mr. Fobert, is it or is it not a fact that when you make a bid, you don't rely entirely upon the profile, do you?

A. No.

Q. Isn't it a fact that you rely upon what is told you by the engineer as to how he is going to have that work done?

A. Sure.

Q. Don't you rely upon that just as much as you do upon your profile?

A. Yes.

Q. That is a fact, isn't it?

A. That is a fact.

Q. Now suppose when you went out to do this work the engineer had told you that when he set his cross section stakes and his slope stakes, they would be set in such a way you could cast the material instead of hauling it, what would that meant to you?

A. Meant time and cheaper doing work.

Q. Suppose he told you when you went to bid on this work, he was going to set the slope stakes so you would have to go up in the side of these hills and make deeper cuts, would the bid been the same as it would have been as a mere cast on the side?

A. Would have raised it; would have meant more work.

Q. Would you have agreed to do it for him for the same money?

A. No, sir.

Q. Would you want more money?

A. Want more money. Want more time.

Q. Now, so the Court will get this straight, before this contract was let you didn't go up on that work at all yourself, did you?

A. No, sir.

Q. The first time, as I understand, you went upon this work was after the contract had been made; is that true?

A. The contract was made.

Q. You had nothing to do with determining the prices or the amount of money you were to get, or to charge the Whitney Company, for building that road, did you?

A. No, sir, had nothing to do with that.

Q. Who did all that?

A. Rajotte.

Q. So when you were called in consultation, as you said at the Portland Hotel, to determine how you were going to do this work that was based upon information given you by Mr. Rajotte; is that correct?

A. Called into the Portland Hotel?

Q. Yes, when you had the conference over there and you were discussing ways and means of doing this work and the possible cost of it. Your judgment at that time was based on what was told you by Mr. Rajotte and others; isn't that true?

A. Yes, sir.

Q. Now, Mr. Freed asked you this question: If slight changes in the alignment of the grade—you know what I mean don't you when I say slight changes in the alignment—you know what I mean when I say that?

A. Change the line a little bit, not much.

Q. Yes. Now you said you understood at the time you were in the Portland Hotel that slight changes might increase the amount of work; you understood that at that time?

A. Yes, sir.

Q. Now, slight changes might change it from a cast proposition to a dumping proposition; isn't that true?

A. Yes, sir.

Q. It wouldn't take much change to change the character of the work, would it?

A. Yes, sir.

Q. A few feet might change any one of these cuts along this hill to a haul proposition instead of a dump proposition. Isn't that true?

A. Yes, sir.

Q. A matter of changing the line a few feet?

A. Yes, sir.

Q. Now you said that you were delayed considerably at the beginning of this work, and in order that the Court may have a better understand, I want to ask you this question: Isn't it a fact that you planned on putting your steam shovel clear across the creek, or up there in the beginning?

A. Yes, sir.

Q. And rushing it through a certain part of this roadbed—to get the matter clear in the mind of the Court—first find the Kilches River; about 234. Now isn't it a fact that you planned to get through along part of this in here before October?

A. I planned on getting through here before all the—there would be no cars used there; just steam shovel.

Q. Just a moment; isn't it a fact you planned on getting through all of that before the first of October?

A. Yes.

Q. And before any rains hit you?

A. Yes, sir.

Q. I now ask if this isn't a fact: That the character of the soil in this section is very different from the character of the soil in the upper end of that work?

A. This is the wettest part.

Q. Yes, wet, and what other conditions existed there?

A. From this point down is wet.

Q. Isn't it a fact that it is infested with springs?

A. Yes, sir.

COURT: That is the lower part?

MR. DOBSON: No, after you cross the river; after beginning to use the steam shovel.

A. The work up to Clear Creek is the wettest part of the whole work.

Q. About what station to what station? This is Kilches River. From here on? What one point is the wettest part of the work?

A. Between the two bridges.

Q. Between Sam Down's and Kilches River?

A. Yes, sir.

Q. I want to ask you if it isn't a fact that when you were considering this work that you had this situation in mind; in other words, you know what was the condition up there?

A. Yes, sir.

Q. And when you told Mr. Freed here a minute ago that you could have completed this contract within the time of six months, or five months or whatever it was, you had the first condition in mind, didn't you?

A. Yes, sir.

Q. I want to ask you this: In your experience, isn't it a fact that you have built many similar roadbeds, railroad beds?

A. Yes, sir.

Q. Isn't it a fact that you have built roadbeds twelve miles long or longer which would average even less than the amount of time you calculated to build this roadbed?

A. Yes, sir.

Q. And when you answered Mr. Freed's question, you were basing your answer upon your experience, were you not?

A. Yes, sir.

Q. And having in mind all these conditions?

A. Yes, sir.

COURT: Do you know how much shovel work was to be done before you reached the river?

Q. What the Court wants to know is this: Before you got to Kilches River about how much work was there to be done—shovel work?

A. Our calculation was just one cut.

Q. What cut is that?

COURT: How much yardage? Do you know anything about the yardage in this cut? Does it show on this profile?

MR. DOBSON: This is it, what we have been referring to as Cemetery Cut.

COURT: This 6856 yards, is that it?

Q. What the Court would like to know is about how long?

COURT: 1456 before they get to that.

MR. DOBSON: That is a cut, yes.

COURT: Two cuts making about eight thousand yards.

Q. What the Court would like to know, Mr. Fobert: How much time did you plan it would take to make these two cuts here had you gone right up there?

A. How much time?

Y. Yes.

A. How long it took to make them?

Q. Yes, about eight thousand yards.

A. They took about a month to finish.

COURT: What?

A. It took a month to finish them.

COURT: You expected to take a month?

Q. Took a month to go through those two cuts?

A. About that.

Q. Why did it take so long?

A. Awful mean cut; awful mean to get train.

Q. If you commenced there the 5th of October, or rather the 5th of August, you would have been out of there by the first of September, or thereabouts?

A. Yes, sir.

Q. You would have been ready to cross the river right after the first of September?

A. Yes.

Q. Going through that work from that point on with your steam shovel plant and doing this work in the manner you contemplated about how much progress could you make per day?

A. What point?

Q. After you crossed the river?

COURT: Do you know what quantity of material to be moved?

A. Moved with steam shovel? Cast supposed to be.

COURT: The yardage, do you have any idea about the yardage?

A. The profile shows that.

COURT: How do you know the aggregate amount?

A. Don't know the exact amount; figured about a month and a half to complete that work between the two bridges, one shift.

Q. So you would have been up there through the worst part of that work by at least October 15th?

A. Yes, sir.

Q. That is what you have in mind?

A. Yes, sir.

Q. Now what is the capacity of this steam shovel plant per day as a casting proposition?

A. Good casting or bad?

Q. Casting such as you were encountering after you got across the river up there.

A. The capacity of the shovel, steady work, steady casting about 3500 yards heavy work.

Q. What would you consider up there—heavy casting?

A. No, sir, light casting.

Q. Light casting what would you figure?

A. Light casting about two thousand yards; some days three thousand yards.

Q. You figure a fair average to do that work up there a thousand yards a day?

A. Two thousand yards a day a fair average.

Q. Now, I want to ask you this one question about the trestle. As I understand it the plaintiff in this case, the Rajotte, Fobert Winters Company, had nothing to do with building the trestles.

A. No, sir.

A. That was not part of their work?

Q. Is it a fact or not a fact that all of these trestles were filled or were any of them bridged or left in trestle or frame work; were any one of these points which are indicated on this profile as trestle—was it built as a trestle or was it filled.

A. What point?

Q. Upper end of the work?

COURT: End of the work.

A. Some trestles filled.

COURT: Were any of them put in as trestles?

A. Clear Creek and Sam Down's Creek.

Q. Those are bridges?

A. Bridges.

Q. I am talking about these trestles?

A. They were all filled.

COURT: No trestle?

A. All fill, your Honor.

Q. As a matter of fact there were only two bridges built up there on that work, that is Sam Down's Creek and Clear Creek?

A. Yes, sir.

Q. And all the rest of them are fills?

A. Fill

Q. Now, Mr. Freed asked you if it wasn't a fact that you couldn't have built this roadbed by merely casting the material over the side; that there were some places you couldn't have made your fill stick. Is that true?

A. Yes, sir.

Q. How many of those places; were there many of them or just a few?

A. I don't understand.

Q. Mr. Freed asked you if there were any points along this line, the upper end of this work, where you planned casting the material over the side, and making the roadbed by dropping the material from the upper side of the cut down to the lower level of your fill—whether or not there were not many places you

couldn't have done that because you couldn't make that material stick?

A. Two or three places you couldn't have done that; material wouldn't stick.

Q. Why did you say to Mr. Freed there were many places you couldn't do that? Do you want the Court to understand that all along the upper part of this work there were many places there you couldn't have done the work as you originally planned it because you couldn't make your fill stick? Do you want the Court to understand that?

A. I don't quite get that question.

Q. Now, we are looking at the profile, Mr. Fobert. Along up here you run into a number of fills. You say that you had planned when you started this work to cast the material over the side and build your roadbed on one side with the material you dumped over with the steam shovel on the lower side?

A. Yes, sir.

Q. Would you say that at all of these fills along here you wouldn't have been able to do that—to build your roadbed and make your material stick by simply casting the material down on this side?

A. Which station?

Q. Any one of them .

A. There is some places.

Q. How many are there? I wish you would point out on the profile how many places there you couldn't have done that. The Court got the impression there were a great many of those places you couldn't have done the work as you planned to do it.

COURT: I don't understand; perhaps it is my ignorance, but I don't understand how he could tell by looking at this profile just the location on the ground.

MR. FREED: I don't understand that either.

COURT: How can he tell or anybody tell by looking at this profile just where this line is to be located?

MR. DOBSON: The evidence shows that this line was not moved but a few feet one way or the other.

COURT: How can he tell by examination of this profile just where the fill—where the dirt will stick and where it won't.

A. I couldn't tell when I looked at it first time, no, sir. I can tell points here and there where the dirt won't stick because I was there.

COURT: You couldn't tell when you looked at it the first time. How could you tell when you did the work that it is not done on the line as shown on this profile?

A. How can I tell not done on the line the profile shows?

Q. Yes.

A. I can't tell that.

Q. If you took this profile and went out on the work, you wouldn't be able to locate that work at all, would you?

A. Locate that line all the way through.

COURT: Locate and build it?

A. No, couldn't build it, no, sir.

COURT: I don't know—I am not an engineer——

A. Your Honor, the right of way is cleared; it has lines run on the others, your Honor.

COURT: I know run through the others, but 'wasn't there a map of location that accompanied this?

MR. FREED: That is the map we have been speaking about they were supposed to receive; they say they didn't; we think they did.

Q. As a matter of fact, Mr. Fobert, did you ever have what is called a location map?

A. All we ever used was this; that is what you get on any railroad. That is all you get to go by.

Q. Suppose there had been no part of this road-bed out in the open and no part of it staked out at the time you went out there. Would you then tell the Court you could take this profile and locate any part of it?

A. I can't quite get you; explain that again.

COURT: Suppose somebody had given you this profile and said, "Now, I want to build a railroad beginning down there at the Southern Pacific Crossing and run up in the mountain eight miles."

MR. DOBSON: Mind you, there had been no clearing done, been no stakes set, no stakes you can be directed to to start from. Could you then locate the railroad from this profile?

A. There is stakes.

Q. That is just the point.

COURT: Suppose there were not; suppose they sent you down with just this profile and say, "I want

to build a railroad beginning at the Southern Pacific Crossing, wherever they commence, running out into the mountains." You had no lines at all, and no stakes on the ground at all.

A. No stakes on the ground at all?

COURT: Yes.

A. Yes, I can locate the line.

COURT: Locate the road from this?

A. No, not exact. I can locate just where it went there.

COURT: Wouldn't you have to have some point to start from?

A. Have to have; couldn't make a profile without it.

Q. Don't tell the Court then you could take a bare profile before there had been any clearing or any stakes set out there and locate this railroad. You don't mean that.

A. No, sir, the center line was run, was located. This railroad was located and the stakes set and we went along.

Q. What you want the Court to understand is this: There was center line stakes set when you went out to look.

A. Center line stakes set.

Q. Without those center line stakes you couldn't locate this?

A. No, not without.

Q. Now, the Court also asked you this question. How you could say at this time, from looking at this

profile where there were cuts made, and where there were fills made. How can you tell him that?

A. Here is a cut and here is a fill. Here is another cut. Here is a bridge. Shows that.

COURT: I understand that; shows a fill there and shows a cut. Above the line is a cut, below is a fill. But how can they tell by examination of this just where the material is to come from for that fill; just by looking at this profile?

A. By starting at the——

Q. No, no, you don't have to go back here. Here is a fill here. Now, you have to fill that up as you go along. Where are you going to get the material to fill that?

A. That cut there and that cut here.

Q. Can you read this right here?

A. Yes.

Q. What does that say?

A. Says 4230 yards.

Q. What is that word before it?

A. What was that? B-a-r.

Q. What does that mean?

A. Borrow.

Q. If you see that, you understand you would have to open up a borrow pit to make that fill?

A. Yes, sir; borrow from the cut to make it.

Q. In other words, you would mean this: That this cut up here at Station 250 didn't have enough material in the cut as laid out to make this fill?

A. Yes, sir.

Q. And you would have to open up what we call a borrow pit and take out more material than you would take out to make the cut for the roadbed to go through, in order to fill this place?

A. Yes, sir.

Q. What the court wants to know is how you can, at this time say where these cuts and fills were made, by referring to the profile.

COURT: And how he can tell that the dirt wouldn't stick as he calls it.

Q. To make that clear take this one here. Had you planned to make this with a casting proposition or would that be cut?

A. Planned to do all that work cast.

Q. Explain to the court how you can now say that this material if you dumped from the upper side of this fill, side of the hill down into this lower side, to level up your roadbed, how can you now tell the Court whether or not that material would stick there?

A. There wasn't no place here what the material would stick, because it was too steep.

Q. In other words, you fixed in your mind about the slopes?

A. Slopes.

Q. If it was a very steep slope, the material would not stick, is that it?

A. That is it.

Q. Were any slopes through here steep?

A. No.

Q. Where were the situation arise he just re-

ferred to of being unable to make the material stick if cast over the side?

A. We had a place above there.

Q. The fact is that was up where the slopes were steeper?

A. Straight up and down.

Q. That necessitated going up the hills further?

A. Straight up and down.

Q. To make that a little more clear, do you understand degrees?

A. Yes.

Q. For instance, I say the degree of a slope?

A. Yes.

Q. Can you state generally what the average degree of the slope was through this part of the work, from, we will say, Kilches River up to Sam Down's Creek?

A. Slope of the cut?

Q. Average slope.

COURT: Over the mountain.

Q. Running alongside the mountain.

A. Slope of the mountain?

Q. Yes, that you were moving along. What was the average, if you know?

A. I don't know that I could answer.

Q. You are not an engineer?

A. Not an engineer; couldn't answer that question.

Q. All you can say was it wasn't so steep?

A. That is all.

Q. Do you know what benching means?

A. Benching?

Q. Benching, yes; do you know what that means?

A. Yes.

Q. What would that have to do with some of these slopes that wouldn't stick?

A. Say you had a long slide here; say you were dumping over steep side of a hill, and the dump kept sliding, and to stop that slide, lots of places do that benching. You go down to where it would be required to keep the material from going down to the bottom and bench. The meaning of bench is to put a grade there for a shoulder. In other words, when the dump hits there it has got a shoulder, got a flat place there to hold it.

Q. That stops the slide?

A. That stops the slide.

Q. Now, then, is there any places up there where you couldn't have done that instead of going up into the hills?

A. Yes.

Q. There were some places where you couldn't even build that way?

A. Some places that couldn't be done.

Q. Isn't it a fact on many of these slopes you did just that thing, you benched?

A. I did some of that work on the railroad. Every time we worked.

COURT: What?

A. I have done some of that work.

Q. Down here; we are talking about it down here.

A. We done it in that work.

Q. You are sure about that?

A. Yes, sir.

Q. Now, Mr. Fobert, you didn't plan when you went down there moving all this yardage by steam shovel, did you?

A. No, sir.

Q. Isn't it a fact considerable part you planned to move by hand and teams?

A. Yes, had to make the time.

Q. I want to ask you one more question about these cross section stakes. As you moved along on this upper part of the work, isn't it a fact, or is it a fact that the defendant company, that is, the Whitney Company, had its engineer working right along ahead of you setting stakes, more or less? Isn't it a fact?

A. Yes, it is a fact.

Q. Do you recall whether or not there was a man by the name of Kraft? Do you remember Mr. Kraft, did you know Mr. Kraft?

A. Yes, sir.

Q. Was he there at that time? Did you ever see him up there setting stakes?

A. I saw him.

Q. See him frequently?

A. Mr. Kraft?

Q. Yes.

A. Saw him in the courtroom.

Q. No, no, up on the work.

A. Yes, sir.

Q. Didn't you see him quite often up there?

A. Yes, every day.

Q. Did you ever have any controversy with him about the setting of stakes?

A. I don't remember.

CROSS EXAMINATION

Questions by MR. FREED:

Q. Mr. Fobert, it is my remembrance that Mr. Rajotte said that you were in the Cemetery cut for two months.

A. I wasn't there.

Q. You weren't there?

A. No.

Q. Then when you made the statement to the court about the time that the Cemetery cut required, you really didn't know about that, did you?

A. I don't quite catch you.

Q. You told the court something about how long it took you to get through Cemetery cut.

A. I didn't tell how long it took me. They asked me how long I thought it would take me to do the work.

Q. Oh, you were just speaking what you thought it would take?

COURT: Does he state a month?

A. I told him as near as my knowledge, my experience.

Q. What did you say, do you remember?

A. I told them about a month.

Q. Therefore, if the records show that it actually took you, your company, two months to do the work which you figured you could do in one month, then would you say you were making just half the progress you should have made?

A. Explain that again, please.

Q. You told the Court that you expected to get through Cemetery cut in a month, to do that work in a month?

A. Yes, sir.

Q. Now, if it turns out here, if the records show that it took your company two months to do that work—

A. Yes, Cemetery cut.

Q. I say if it does, you don't know anything about it you say, but if it did take them two months to do it, then they were working just half as fast as they should?

A. If they didn't do it in that time, took double the time, took longer than they figured, certainly.

Q. Now, if you plan to do all that upper part of the work by dumping—you know you told the court that you planned to do dumping up above, Mr. Cole had told you all that work up above Sam Down's Creek—I think—would be dumping work—

A. No.

Q. Who told you? Did anybody tell you?

A. No.

Q. There was part of that work you planned to do dumping work entirely?

A. Part of that work.

Q. Some parts along the roadbed you expected—

MR. DOBSON: Dumping and casting are two different things; if you are asking about casting.

MR. FREED: I am asking about dumping. All he has to do is to say no if he understands the word.

Q. Let me ask you this, if you don't understand that. What about casting. Certain parts of the line upon which you expected to do casting only, isn't that so?

A. Yes.

Q. What part of the line was that? Don't show it to us, what station?

A. Between the bridge crossing the river and Clear Creek.

Q. That is Kilches River to Clear Creek?

A. Wasn't supposed to take any cars across there at all.

Q. If that was to be—

MR. DOBSON: Just a moment. He says he didn't figure taking cars at all. What do you mean taking cars across there? Tell the Court what kind of cars you had reference to. You mean dump cars, don't you?

A. Dump cars; the cars hauling material down.

MR. DOBSON: Hauling material out of cuts.

Q. Then why did you bring your dump cars up on the job at that point? You had them ready to bring up on that part of the job, didn't you?

A. They were on the work.

Q. If you were going to do casting only at a place you wouldn't have any need for your dump cars, would you?

A. No, sir.

Q. Didn't you have your dump cars ready to do your work at that point?

A. I didn't get you.

Q. If you are going to do a cast job, you understand?

A. Yes.

Q. No dumping. If you are going to do a casting job, you would have no need for your cars, would you?

A. No.

Q. You wouldn't need any dump cars?

A. No.

Q. Now, part of this work you said you had planned to do by casting entirely?

A. Yes.

Q. You said that was between Kilches River and Clear Creek?

A. Yes, sir, supposed to do all that cast by shovel; no car at all.

Q. Did you, or did you not bring your cars up ready for use at that point?

MR. DOBSON: He wasn't there.

A. I wasn't there.

COURT: You were there when they began work across the river, weren't you?

A. No.

Q. Where were they working when you came up?

A. Around Station 270.

MR. DOBSON: That is where they were when you went up?

A. That is where they were when I went up.

COURT: What is the station at the river?

A. The river is Station about 234.

Q. You don't know anything about that?

A. I don't know anything about that.

Q. Now, Mr. Fobert, if it took your company two months to go through Cemetery cut, do you think that they could finish that job in four months, the whole roadbed in four months?

A. You can't base that on Cemetery cut. That was the meanest cut in the whole line. You had to go up just like trying to climb over the top of that house, and taking material down in a hole. You can't classify that with the whole work.

Q. If it took you two months to go through that cut, you still mean to tell the Court you could have finished that work by January 1st?

A. I didn't figure two months; I figured thirty days.

Q. I understand that; if it did take two months—

A. I don't know how long it took.

Q. When you told me a while ago you could finish that work by January 1st, you were figuring only one month for Cemetery cut?

A. Yes.

MR. DOBSON: I can give you the dates of that cut. We went in the cut on September 10th; went out October 7th.

MR. FREED: That didn't take two months then.

MR. DOBSON: No.

MR. FREED: I haven't that record—my record. I will drop that temporarily, but I will check my records.

Q. Now, Mr. Fobert, let's turn to Station 390 here. I want you to show the Court the difference between this profile before you reach 390 and after you reach 390. I asked about that yesterday but didn't seem to get very far. What are these words down here, just below, along 380 at the bottom?

A. Projected line.

Q. And this—that is projected line?

A. Project.

Q. Now do you understand then that up to Station about 378 this profile shows that the line was located on the ground? That is a fact, isn't it?

MR. DOBSON: We don't dispute that.

Q. This profile showed you gentlemen that beyond about 378—

A. I can't get you.

Q. What does this projected line mean? What do you mean by projected; what does the words projected line mean to you as a contractor?

A. It isn't exact line.

Q. What is it?

A. It isn't exact line. Profile does not show it exact.

COURT: Is not the exact line?

MR. DOBSON: Isn't that paper location?

MR. FREED: Mr. Dobson, I am trying to keep my patience but you can't lead him while I am questioning.

Q. This shows you, does it not, that beyond Station 378 you had no right to believe that this line was accurate?

A. I don't know "believe".

Q. You knew then?

A. I don't know the line before the contract signed at all.

Q. But anybody—you or Mr. Rajotte or anybody else looking at this profile map when it shows that from 378 on this line was only projected—was only projected from 378 on, that shows you, doesn't it, that the line appearing on this map with cuts, fills, etc., was merely down on paper?

A. Down on paper.

Q. And had not been on the ground?

A. And had not been on the ground.

Q. And don't you know, and didn't you know, and shouldn't Mr. Rajotte have known that when you start to locate a line on the ground from a projected paper location that there are necessarily a number of changes to be made?

A. Yes, sir.

Q. That until you have located it on the ground you don't know whether you are running up a hill or down a hill at that point; that is whether the loca-

tion is thrown up a hill or whether the location is thrown down a hill?

A. I don't know.

Q. You couldn't tell at this point whether you were one mile from the top of a hill, or whether you were a mile from the bottom of the slope, could you? Just looking at this—just looking at this and knowing it was a paper location?

A. No, I couldn't tell you how high the mountain was.

Q. No, I don't mean the height of the mountain. You know that this is only a paper location or projected line. Now, could you look at this paper location or projected line and know whether or not, when that was finally located—you understand?

A. Yes, sir.

Q. —it would be—here is the side of a hill; we are running along here—whether it would be run up here or down here; could you tell? Could you tell whether that was going to run here or was going to run here, just from looking at that?

A. Me on the work or just looking at that?

Q. You sitting right here; that is all you have seen; just right here.

A. This profile tells the yards of that cut; be in side hill and by the yardage of that cut we know would be.

Q. I know, but could you tell whether or not when you ran that out you were going to strike a place where the fill wouldn't hold?

A. No.

Q. You couldn't tell that?

A. No, no, no.

Q. When Mr. Norris went to run out the line here, if he tried to follow it exactly you couldn't tell whether you were going to strike a place where the fill wouldn't hold, could you?

A. No, sir.

Q. Nobody could tell?

A. No, sir, in places you can't tell.

Q. I mean from looking at this. No human being could tell.

A. I couldn't tell, no. If you was building could tell.

Q. Holding this up—knowing this is the ground along there, and holding this in front of you, knowing only a projected line, no human being could tell when you located a line there whether you would strike a place where the fill would hold or wouldn't hold, could you?

A. Not by looking at the profile.

Q. Of course if this was level ground along here, would know he was going over level ground?

A. Yes, sir.

Q. But here is a big hill.

A. Yes, sir.

Q. Here is a hillside?

A. Yes, sir.

Q. That is what I am talking about.

A. Yes, sir.

Q. And you know this line was only projected?

A. Projected line.

Q. Now, I want to ask you, is it the custom—I don't mean custom, but isn't it usual, when you go on a job that you want to see the location map?

A. No, sir.

Q. Consult your location. This is a profile. I am talking about location map.

A. That is all I ever had; that is all I ever seen.

Q. When you figure on a job, do you figure on profile without location map?

A. I don't figure on it.

Q. You don't figure on it?

A. No, never.

Q. The location map is a map that shows you where the road is actually going to run, isn't it? That shows you whether going to run uphill or downhill; I mean run along the top of the hill or run along the bottom of the hill—that shows you.

A. That is all I ever saw. My part—my work was—that is, as far as looking after the work, actual work on the job has been my part, all the time on the work; figuring the work is up to my partner.

Q. That is, Mr. Rajotte figured what he thought he could do, and it was up to you to do it?

A. Yes, sir.

Q. You didn't, before the contract was let, sit down and really figure out yourself what this profile map meant, did you?

A. Look at the profile and figure out and tell you so many yards on the job?

Q. He told you?

A. Yes.

Q. He didn't tell you that the chief engineer—that the contract said the chief engineer can vary this?

A. He didn't have to tell me; I knew that myself, from my experience.

Q. Didn't you think, when you went on the work, you would have much more yardage to move?

A. I never thought a logging road would increase the yardage. Logging roads usually build as cheap as possible.

Q. Take that cut, just before reaching Kilches River; you told the court before you reached the Kilches River there were only two cuts, the Cemetery cut, and the one just previous to that, that you were going to use the steam shovel on, didn't you?

A. Yes, sir.

Q. How were you going to make that cut just before you reached Kilches River? Just turn to Kilches River, 230; just beyond Kilches River. Now, how were you going to make that cut—by hand?

A. By hand, pick and shovel, and a little car.

Q. Is that the best way to make a cut like that? Were you going to make that cut which calls for 3084 yards, were you going to make this steep cut by hand?

A. Yes.

Q. Now, what was the material in that cut?

A. Solid rock.

Q. And you mean to tell the Court that in that place you were going to move 3,000 yards of solid rock with a straight up and down pick by hand?

A. Yes, sir.

Q. And yet when you come to material on the upper parts of it, where the cuts were less steep, and less material to move, there you were going to do your excavating with shovel?

A. Just a minute. I understand that. This is solid rock, your Honor, straight up and down, and has to be shot, hasn't it, has to be broken up by powder. This cut is a short, steep, straight up and down, and just a point sticking out of solid rock, and have holes put in it, and blown, break the rock with powder. When the powder broke that rock, instead of being—what is the yardage there—two-thirds of that rock was going to be off the cut altogether. There was no other way to break that rock. If I put enough powder under one corner of this building to take a piece of this building about sixteen foot wide, the powder aint going to raise that building up in the air, and set it back in the same place again. That building would be scattered all over. There was no other way to do that. Very little work left for hand, to be done.

Q. You intended to do by hand anyway, you say?

A. Yes, sir.

Q. Did you do it by hand?

A. Wasn't much left in that cut after had to be moved.

Q. Did you do it by hand?

A. No, I wasn't working up there.

Q. Now, will you tell the Court how much yard-

age a day did you move when you were casting with your shovel? Just an average day?

A. When I was casting?

Q. Yes, what yardage?

A. Whereabouts? What job? What place?

Q. Pick out three or four places if you want to. I want to average it. You know what average is. I am willing to have you pick out three or four places to show the Court.

A. Was only one place where done any casting on the whole job.

Q. What did you do then? How much a day did you cast? What yardage did you get rid of in that job, if that is the only place you did?

A. I didn't keep track of that.

Q. At what point was that?

A. Where we finished up, the last place.

Q. Unless you want to turn to it, don't do it for me. Have you any idea—

A. Was making about between three and four hundred feet a day as we cast.

Q. Were casting three or four hundred feet a day?

A. Yes, sir.

Q. You were making that much progress, you mean? Is that what you mean?

A. Ahead there.

Q. You mean you were moving ahead on the line three or four hundred feet a day?

A. Just for two or three days.

Q. Would that be an average progress that you

would make? Would you go ahead about three or four hundred feet a day all along the line if they would let you cast?

A. Some days you wouldn't be able to make quite that much; others days you beat it; make over 400 feet.

Q. Suppose you had been allowed to cast, if they had built the road so you could have cast, about how many feet a day could you have made, do you think?

A. On an average?

Q. Yes.

A. What distance will you give me to do that work?

Q. Take an average.

A. Average casting?

Q. Take about the kind of work you had to do here.

A. That all depends on how much I can cast over. If I had places where good casting, wouldn't go so far ahead; in places level to cast you make a thousand feet.

COURT: Suppose you had done this work the way you say you planned to do it by casting, as you call it. How much progress would you make, average a day?

A. We could move average in yardage, you mean?

COURT: No, no, in distance?

A. Length? Just as I say, some day you could make—

COURT: An average now. You say you planned to do this work by casting after you crossed the river; from there on up all to be done by casting; no car work at all. When you made that plan, did you make an estimate of the progress you would make? How many feet of track or grade you would build each day?

A. Tried to get ahead, yes, sir.

COURT: How many?

A. Around four hundred feet, around there; may be a little more, may be less.

Q. But you think you would average four hundred feet?

A. Oh, we went fast there; in places some days I would beat that. Other days I wouldn't near do it.

Q. Do you know what average means?

A. Average from end of that point.

Q. So from Kilches River up to Clear Creek—

COURT: About how far is that?

A. Six thousand feet.

Q. Is it about two and a half miles?

A. Nine thousand feet.

Q. Now, I believe you said you didn't know the answer to this question, but I want to be sure; part of the work you did by casting. In one place you say you did some casting?

A. Yes, sir.

Q. Now, do you know how much material you actually moved a day when you were casting?

A. No.

Q. Well, some record was kept of that? Your firm will know, will they not?

A. I don't think so.

Q. What?

A. They wouldn't know, I don't think, because I don't know.

Q. If you didn't make a record, who would make a record? Would any of your company make a record?

A. No.

Q. Why didn't you keep record of that?

A. They didn't keep the record of me; never had an estimate all the time was on that roadbed. It was that map.

Q. Didn't you keep a record of the dirt you hauled out?

A. Not me.

Q. Who did?

A. The bookkeeper; timekeeper.

Q. The timekeeper stood there and kept a record?

A. No, he didn't stand there. When the car was taken out and hauled, it was turned in to him; number of cars was turned in to him. Just a minute. Every day the bookkeeper knew where that shovel was, each station the dirt was hauled with those cars, what station the shovel was at.

Q. So they would have a record then of the yardage you actually moved by cast?

A. No.

Q. You won't have any of the casting yardage?

A. No, no record of that; no, sir.

Q. Then if it turns out at this trial that in fact you cast much less than three thousand yards a day, many thousand yards less, then your estimated average of three thousand a day was wrong?

MR. DOBSON: He said two thousand.

Q. What did you say you thought you could average a day casting? How many cubic yards of material?

A. The little bit of casting I done I already told you I was casting there two or three, very light.

Q. You don't get my question. If you had been allowed to cast along this work, about how many cubic yards of material do you think you could have cast a day?

A. As I told you awhile ago, it depends on the cut.

Q. This profile, you have the profile? You say you can tell from that almost anything. If you had followed this profile and been allowed to cast every bit of material, what could you have averaged a day in casting, you say? I think you have answered; I am not sure—I am willing to take your first answer.

A. I don't think I answered that.

Q. Well, answer it now, sir.

A. I can't.

COURT: You said about two thousand yards.

Q. Is that right? Do you think about two thousand yards?

A. Yes, two thousand yards.

Q. Then if it turns out that when you did cast,

you cast much less than two thousand yards a day, you must have been going very slow, isn't that right?

A. You don't get it right yourself. The little bit of casting I done it ahead.

Q. How long was it? How many days?

A. Just two or three days; I don't know if two days or three; might be more; might only two days.

Q. Was that easy work or hard work to cast?

A. Just good yardage.

Q. Was it easy or hard?

A. Easy.

Q. Then you should have cast more yardage on that part of the job. You should have been able to do more a day there than you could have done down on this hard work where they didn't let you cast. Is that right?

A. I can't get you.

Q. You did three or four days of casting, didn't you?

A. Yes, sir.

Q. Keep your mind on what I am saying. I won't trip you up. You did three or four days casting?

A. Yes.

Q. Now, we, I think, have a record of what material moved during that time.

A. Yes.

Q. You understand. I might be mistaken, but I think we have. Now, you say that there was easy casting at that point; that is, easy work to do. You could cast a good deal at that point, couldn't you?

A. Could cast a good deal; it wasn't necessary to cast much.

Q. Didn't you cast for three days?

A. Just a minute. The casting I didn't—it wasn't wide enough. I had a little grade along there for the dinky track. Wasn't enough to come off there—in the first place, that fill was all made too, and was a little bit of a hole in here. I went ahead with the steam shovel, and took up yardage left along there; very little work and dug into the hill a little bit more with my shovel to get a wider; steep bank from the river; here a little fill. I went ahead and carried my dinky track with steam shovel, and what material was to come along that side hill at the same time. So you can't put that as all casting for roadbed.

Q. Then you didn't cast for three days for the roadbed?

A. No, just a few hours; the rest of it was making—saved making trestle for this light fill, and saved making grade for the dinky track. The second place was waste in that cut, was more material than we needed; waste and taking my dinky track at the same time with the shovel, we could do quicker, better job, cheaper.

Q. You weren't asked the reason.

A. You can't take a little bit of work like that and make an average.

Q. You say you didn't spend over two or three hours at a time casting?

A. Spent more. Might spend a whole day, as near as I can remember now.

Q. Do you think you spent a day casting at one time? You said cast a little point for a cut there, a thorough cut, and then grade it.

A. Yes, just a little then.

Q. Just answer the question. You know what I mean.

A. Yes.

Q. When I say, did you do a day's casting right at one time; at one time cast with that shovel for one day. I just want to get it. Did you cast for at least one day with that shovel?

A. On that one place?

Q. Any place. Anywhere on the line did you cast for one day?

A. I told you I cast for two or three days. I explained to you what it was done for. Was some of that material was taken out of the cut, and some of it—

COURT: Were you casting all the time during those two or three days?

A. Yes, sir.

COURT: All the material you moved was cast?

A. Was cast.

COURT: That is all right; it doesn't make any difference what you did with the material.

A. What I want to get at, I don't want you to try to switch off that and get cast and cast for the roadbed, because most of that work was done to avoid doing so much work to build a trestle; instead the cut was short, was a short cut.

Q. I understand. You mean, Mr. Fobert, that

all of that was not good casting. I ask if all of it was easy casting.

A. It was easy casting. Wouldn't all have to be done. Lots of that stuff was waste.

Q. But could you cast as much—I don't care what you used it for, or what you did with it—could you cast as much at that point during those three days as you could during any other three days cast along the line? Was that a good average three days cast? Did you move as much material during those three days casting?

A. No, it wasn't good; it wasn't.

Q. What about it?

A. Because we moved some material to get through we didn't have to move; it holds you back.

Q. I don't mean your progress on the line.

A. As I told you this casting along there was poor casting.

A. It was slow work.

Q. You mean you couldn't move as much material? Is that what you mean to say?

A. No.

Q. What was it—rock or dirt?

A. Rock and dirt both and stumps.

Q. You didn't have any trouble picking them up with the shovel, did you?

A. No, didn't make any difference. What you hit comes; a boulder as big as half this room.

Q. Could you cast as many yards of that at that point—could you cast as many yards there as you

could have back further if Mr. Norris had let you cast?

A. There was no place back there to cast.

Q. Suppose you had built the road so you could cast?

A. So we could cast? Suppose you suppose; you suppose in there. I can't tell you what I could do with the work when I didn't do it, and no plan of any kind for it.

Q. Suppose the roadbed had been built exactly like this blueprint. You say if built exactly like this blueprint—that is my understanding of what you say—much of it would have been cast work.

A. I tell you right back here the profile wasn't exact. Just kind of located.

Q. That puts a new light on it. How did you know, then, you were going to be able to do cast work?

A. Thought it run along the side of the hill.

Q. You thought, therefore, that since you were running along the side of a hill that you would naturally be able to take the dirt you dug out from this side, the hillside, and throw it over on the down-hill side?

A. Sure; lots of it.

Q. Why were you not able to do that in actually building that road? Why didn't you do that?

A. Why, they built a better road.

Q. What did they do? I don't think the Court—

A. What did they do? I don't know what the engineer did.

COURT: You know how they built the road?

A. Yes.

COURT: That is what counsel wants to know.

Q. Why couldn't you have cast the way they built the road?

A. Because I couldn't.

Q. Why?

A. Because they had the cut and fill—they run cut and fill to balance; fill had to be hauled.

Q. In other words, you needed the material that you were cutting out—is that it?

A. Had to get in the fill yes; had to go in the fill every bit of it.

COURT: The material you took out of the cut you put in the fill?

A. Yes, sir. Now, your Honor, we will say this building here is the hill, and from this floor here, we will say that the floor is the grade and the building is the cut and fill. Say the fill is sixteen, twenty feet wide. This cut—half the roadbed is cut, may be a little more, may be two thirds, places more, places less, all guesswork. You go to work, and you take this cut over here and shovel, and throw it over the bank of this; throw it right over the bank. Say this is the bank, this wall; this building outside. You take all this material here and throw it down there and make your fill there. Material comes up from the floor and makes that roadbed full wide by taking half of this building out, and throwing it down there. Puts this half of this material here down the other side of this cut and fill.

COURT: That is where there is material enough in the cut to make the fill.

A. Instead of doing that, some of these cuts that we figure were going to be done we run a cut right straight around through the building where it had to be taken out by car; track placed low on the grade and hauled to these fills, and make the fill.

Q. Well, that was caused by moving the line further up into the hill?

A. That was caused—just a minute. I don't quite get you.

COURT: Was that due to the fact that the line was moved, that you had to do that extra work?

A. No, I couldn't see—just a minute, I don't understand you. It was due, as near as I can tell you, my knowledge to having to build a better line.

COURT: I know; that is all right, but did they move the line?

A. Lots of places the line was moved; made thorough cut instead of these side hills.

Recess until 2 P. M.

Portland, Ore., Friday, Oct. 26, 1923, 2 P. M.

ALEC FOBERT resumes the stand.

CROSS EXAMINATION

(Continued)

Questions by Mr. Freed:

Q. Mr. Fobert, does the profile map which you have that had been given to Mr. Rajotte—you know that profile map that you have been using?

A. Yes, sir.

Q. Does that profile show whether or not a cut is a thorough cut or a side cut?

A. That profile that was given to Mr. Rajotte, you mean?

Q. This profile here. This exhibit in the case, the one you have been looking at all morning?

A. Yes.

Q. Does that show there whether a cut is a thorough cut or a side cut?

A. Would it show if this was a thorough cut or a side cut?

COURT: Can you tell by looking at the profile whether this was a thorough cut or a side cut?

A. I aint so sure about that.

Q. Take this profile. Let's get a cut anywhere, I don't care. Take this. Take a cut. I am pointing out to you now a cut shown between Stations 280 and 290 as an example. Does this profile show whether that cut is meant to be a thorough cut or a side cut? Is there anything on this profile to indicate to you what kind of a cut that is?

A. That is, if it is side or thorough?

Q. Yes, as there. Can you look at this cut here now—this shows a cut, doesn't it?

A. Yes.

Q. Can you look at that cut, and from there tell whether that was intended to be a thorough cut or a side cut?

A. If I am on the ground I can tell.

Q. But take the profile, just looking at the pro-

file, does the profile show that? You know whether it does, Mr. Fobert? Don't you understand my question?

A. Yes, I understand.

Q. Then answer it.

A. I am just trying to see how I can answer that. This part of the profile—

COURT: That shows a cut, does it?

A. Yes.

COURT: Can you tell from looking at that whether a thorough cut or a side cut?

A. Says here 1930 yards cut, that's what it says.

COURT: You can't tell?

A. I can't tell by just looking at the profile at all. If I seen the work, I could tell.

Q. I am not asking that. Now, the second question: If you had been able to build this roadbed as you thought you were going to, and been able to cast all that excavation that you spoke of, wouldn't that material have been waste?

A. Some of it.

Q. What percentage of it? A large part or a small part?

A. I couldn't tell you just how much.

Q. Well, was it a large part of it? Would most of it have been waste?

A. Quite a bit in some points, waste.

Q. Would you say most of it would have been waste?

A. No, not very much.

Q. What part?

A. There would have been some waste on it.

Q. You can't tell how much?

A. No, I could tell how much.

COURT: How far would you move the material when you cast?

A. Just pick it up with a shovel, and swing and dump.

COURT: How far could you move it? What was the distance you could have moved material by casting?

A. I could swing in the bank, get my material there, swing over, and dump over here.

COURT: How far could you move it from there, from where your shovel stood?

A. Around fifty feet around there; maybe sixty.

COURT: And if you had to move it more than fifty feet, you would have to move it in some other way; couldn't move by casting?

A. Yes, sir.

COURT: But wasn't any material moved more than three hundred feet, was there?

A. Yes, lots of it.

COURT: Contract says estimated overhaul of 175,000 yards.

MR. DOBSON: 166,000.

COURT: 166,000 yards overhaul estimated in the contract.

A. I aint familiar with that figure. I don't know anything about that part.

COURT: That was material that was to be moved more than three hundred feet.

A. Some of it, and some moved less than that.

Q. If it was under three hundred feet, you didn't get pay for it?

A. Get paid for what was over three hundred feet.

REDIRECT EXAMINATION

Questions by MR. DOBSON:

Q. Mr. Fobert, could you go over that line today and see where that material has been wasted? Mr. Freed referred to waste material. Could you tell, by going over the line today, where that material was wasted?

A. Yes, sir.

Q. Have you been over the line recently?

A. Over last Monday.

Q. Any evidence of a great amount of waste material? Any idea about how much waste material shows on that line today?

A. No, I haven't.

Q. Well, is there a lot of it, or just a small amount?

A. Isn't very much.

Witness excused.

LYMAN GRISWOLD, A witness called on behalf of plaintiff, being first duly sworn, testified as follows:

DIRECT EXAMINATION.

Questions by MR. DOBSON:

Q. Will you just state your business?

A. I am a civil engineer.

Q. Where are you located?

A. Portland, Oregon.

Q. Did you take a course of training in some college?

A. I am not a collegian.

Q. Are you a registered engineer?

A. Yes, sir.

Q. How long have you been an engineer?

A. About twenty-three years.

Q. During that twenty-three years, Mr. Griswold, what has been your general experience with respect to construction work which would have any similarity to the work under discussion here?

A. I have constructed railroads and highways.

Q. Just tell the Court briefly the number of railroads and highways constructed; briefly as you can.

A. I was on construction of the S. P. & S. Railway, the Spokane International, Spokane Inland Empire, Chicago, Milwaukee and St. Paul, Oregon Trunk and the Oregon Electric.

Q. Any highways.

A. Yes, had charge of the location and construction of the Columbia River Highway between Portland, Astoria in Clatsop and Columbia Counties, and a highway constructed near Biggs, Oregon, the Nehalem Highway, on the Nehalem River, Columbia

and Clatsop Counties, connecting highway between Clatsop and Tillamook Counties and other highways.

Q. I am going to ask you whether or not you ever saw the roadbed constructed by the plaintiff in this case and now in controversy here?

A. Yes, sir.

Q. When did you go over that roadbed?

A. Tuesday of this week.

Q. Did you go from one end to the other?

A. Yes, sir.

Q. I will ask you this, in going over that road, you were able to see the nature of the construction required?

A. Yes, sir.

Q. Would the engineering question involved in the construction of that road, or the contractor's problems in the construction of that road differ materially from the construction of the roads you have had experience with?

A. No, sir.

Q. And you are familiar with the general contour of the country where this roadbed is built down there, are you?

A. Yes, sir.

Q. Now, that the Court may more readily understand some of the questions discussed with Mr. Fobert, we have here some putty illustrating some of these cuts and fills, and I am going to ask you to show the Court how a fill would be changed from a fill to a cut.

MR. FREED: May I interrupt counsel? I may want to object to this witness testifying at all. What are you seeking to show the witness?

MR. DOBSON: His testimony is in the nature of expert testimony, and I think it is perfectly competent to explain the character of the work we were undertaking to do down there, and whether possible to do the work as we contend we understood we were to do it. That is one of the principal matters in controversy in this case.

MR. FREED: This witness does not claim that he was there before you built the road?

MR. DOBSON: No, but he saw the general contour of the country.

MR. FREED: Now, after built?

MR. DOBSON: Yes.

Q. Would that make any difference, Mr. Griswold, as to your determining as to the proper method or best method or method in which it could be constructed, whether you had seen this country before? Would it make any difference?

A. No, sir.

MR. FREED: I object to any testimony from this witness as to what could be done and what couldn't be done.

COURT: We will hear what he has to say subject to your objection; I think going pretty far afield.

Q. Just in your own way, Mr. Griswold, just as briefly as you can, first demonstrate there if you can,

the manner in which you would change a fill to a cut, how that could be done?

A. I didn't make this model, but I think I can explain. (Witness illustrates with putty model.)

Q. You can shape it any way. It is understood this is not supposed to represent any actual cut there, but just as an illustration.

MR. FREED: It is understood I am objecting to it on that additional ground.

A. Well, this represents a hillside. Now, if the line is projected through in this manner, you would have a fill from here to here across this opening. If thrown into the hillside we would have a cut as that is shown there; that represents a cut of the roadbed or part of the roadbed in the hillside.

Q. That would merely mean, Mr. Griswold, that you would move the line over here, and take out a cut here, and put the roadbed on the ground where you removed it?

A. Yes, sir.

Q. In other words, if the roadbed were over here, there would be no necessity for a fill?

A. Yes, sir.

Q. That would involve moving this material over here?

A. Yes, sir.

Q. Now, would that operation in any way interfere with the casting proposition as compared with a hauling proposition?

A. It could.

Q. Would it be necessary to make a hauling

proposition as compared with a cast proposition to do that?

A. If it were thrown over into the hill haul might be required. That would be especially true if this cut—if the material from this cut would be required to make a fill down here at one end of that cut. If it were a simple cast proposition, consisting of moving this material and casting over the side to make a fill alongside, would be no haul involved.

Q. Now, in going over that roadbed I understood you to say you went from end to the other?

A. Yes, sir.

Q. Could that roadbed have been built through there without making a number of what was called thorough cuts?

A. It couldn't have been done on the center line as now there.

Q. Take now the condition of the country through there, the contour of the hills, could it have been built through there as a cast proposition compared with a haul proposition?

A. Yes, sir.

Q. And what would you say as to whether or not it could have been built, a substantial roadbed could have been built, in that fashion?

A. Yes, it could have been done.

Q. One other question; you have been engaged in this railroad contracting a good many years?

A. Yes, sir.

Q. Then there is some reference made to maps here,—location maps—or not location maps, but

maps or plans as distinguished from a profile. Do you know what I mean? What I refer to?

A. Yes, sir.

Q. Is it customary in work of this kind to furnish contractor with a map other than a profile?

A. No, sir.

Q. Now, Mr. Griswold, do you ever have to do with the letting of contracts or dealing with contractors in your experience?

A. Yes, sir.

Q. I will ask you to state when a contractor undertakes to figure on work of this character such as you saw done here—

MR. FREED: It is understood, my objections go through all of this.

COURT: I understand.

Q. Does he take into consideration merely information given him by profile or does he consider something else?

A. He considers other sources of information.

Q. What other sources does he consider?

A. Consults with the engineer in charge of the work.

Q. To what extent can he depend upon the information given him by the engineer?

A. The contract usually provides that the engineer may change the line, but it is customary for the contractor to ask an engineer if he intends to change the line, and if so, what changes he expects to make. Further, he asks him regarding original material; in the case of rock cuts he asks if he will let him use

what we call coyote holes or will insist on the use of down holes, and he asks in general such questions as he thinks are necessary to learn just what the engineer wishes to have done.

Q. That is for the purpose of determining how the contractor can do the work, is it not?

A. Yes, sir.

Q. So the profile is not the sole guide?

A. No, sir.

Q. Now, Mr. Griswold, in work of this nature, what is the custom as to whether or not the contractors on the work are furnished with the yardage as they move along?

A. They are usually furnished with estimates of yardage each month, what is called a monthly estimate?

Q. That is the yardage they have moved?

A. Yes, sir.

CROSS EXAMINATION

Questions by MR. FREED:

Q. Mr. Griswold, are you now a practicing engineer?

A. Yes, sir.

Q. Are you not appearing in this case as a paid expert?

A. I am.

Q. Isn't that a part of your business, to give expert testimony for contractors?

A. For anybody that wants it.

Q. Don't you do that a great deal?

A. Yes, sir.

Q. In these cases of controversy between contractors and other people, you very often give expert testimony?

A. Yes, sir.

Q. And you are paid for that?

A. Yes, sir.

Q. And that is your province in this case?

A. Yes, sir.

Q. When you went down over that ground on Tuesday, who went with you?

A. Alec Fobert.

Q. Did you carry a profile map with you?

A. Carried a profile.

Q. What profile?

A. Carried photographic reproduction of this profile in evidence.

Q. Where is that, sir?

A. I haven't it with me.

Q. Who has it?

MR. DOBSON: Can you get it?

A. No.

MR. DOBSON: Just explain why.

MR. FREED: Just a moment; you can't coach him on the sideline.

MR. DOBSON: I didn't intend to, Mr. Freed, I didn't intend to.

Q. You can't produce it, you say?

A. No, sir.

Q. Somebody else has it?

A. No, sir.

Q. Anybody in the courtroom?

A. No, sir.

Q. Did you have any other paper with you?

A. Than this profile?

Q. Yes.

A. No, sir.

Q. How much of the territory did you cover?

A. We covered it all; that is, I say all; the last station we were on was around 570; somewhere in that vicinity.

Q. You covered everything from Station 1 to Station 570?

A. Well, I believe it starts at Station 100.

Q. Well, Station 100?

A. Yes, sir.

Q. Did you cover anything in Mile A, that is, from O back?

A. Yes.

Q. What means of location did you use?

A. We walked over this Mile A and we walked from the Southern Pacific crossing—

Q. Where is that? What station?

A. Station 100, the beginning of the line eastward, and we walked from there to the Station at 205 or 210. I don't know exactly; we took a train and went from there to the upper end of the works; we got off at the upper end and walked over—

Q. The upper end is about what station?

A. I think the trains stop about 550, if the stations were given right, anyway, building a tram-

way there, then I walked from that about, I think, about four miles down the hill.

Q. Four miles back?

A. Back towards the Kilches River, and then the rest of the distance from there to the Kilches River made on speeder.

Q. In other words, how much of the track did you cover on speeder?

A. I would say, about two and a half miles, perhaps. I am not sure about that.

Q. How many miles did you cover on foot?

A. About six miles.

Q. Covered about six miles by foot? And you covered approximately two and a half miles by speeder?

A. Yes, sir.

Q. How fast was the speeder going?

A. I don't know, probably about fifteen miles an hour.

Q. Did you have your profile open while you were doing all that, looking at it?

A. Yes, part of the time, not all of the time.

Q. What about when going along fifteen miles an hour on a speeder, were you unrolling your profile as you went along?

A. Not at all.

Q. On that two and a half miles you covered on the speeder you did not have your profile open?

A. No.

Q. When you were walking along there six miles did you have the profile open?

A. Yes.

Q. As you walked from station to station you unrolled the profile?

A. Yes, sir.

Q. How long did it take you to walk that six miles?

A. We were on the work about eight thirty in the morning and we reached Kilches River between two and three o'clock. We were on the line probably five hours.

Q. And during that five hours, you covered the six miles on foot, examining the way in connection with the profile, and then went over the two and a half miles on a speeder?

A. Yes, sir.

Q. As I understand, you went to the upper end on a speeder and then came back? That is, this was additional travel done on the train, you say, and not on the speeder?

A. Yes, we went up the line by train.

Q. For my information, what do you mean, a logging train? It wasn't a passenger train?

A. No, it was logging.

A. They don't run passenger trains over there?

A. I believe not.

Q. Who told you where that roadbed was to be located according to that profile?

A. Where supposed to have been located?

Q. Yes, according to the profile; how did you know where and what part of this hill that roadbed

was supposed to have been located, as you now claim here.

A. I had no means of knowing where the road was supposed to be located.

Q. You understood the claim was made in this case that the road is not located at the place where the Rajotte-Fobert-Winters or Rajotte-Winters Company thought it was going to be located?

A. Yes, sir.

Q. In parts?

A. Yes, sir.

Q. I want to know where you got your idea as what part of this hillside it was supposed to be located. Of course, you could see where it was located. How did you know where they intended to locate it?

A. I didn't say I knew that.

Q. How do you know, then, how we could have moved it up or how we could move it down. Who told you about all that?

A. I was asked to illustrate a principle there, to make illustration.

Q. Why did you look over the roadbed? Couldn't you illustrate your principle without looking over the roadbed down there Tuesday?

A. I looked over the roadbed to learn the type of road that had been constructed and see if any waste banks along, any waste material.

Q. For all you know according to the preliminary plans that were made, that roadbed might have

been intended to run clear over here, and not on the hillside at all; is that correct?

A. Yes, some distance away.

Q. For all you know, might have been in Coos County instead of down in Tillamook County; that is, you have no way of knowing. That is a little exaggeration, but you have no way of knowing just what part of that terrain the railroad was to be made on, and all you have told the Court, all you intended to convey to the Court, is if you have a cut here, and if you intend to run a road here, and you throw it up the mountain side a certain thing happens?

A. Yes.

Q. That is all you mean to tell?

A. Yes.

Q. How do you know what you covered on this trip?

A. From Mr. Fobert's statements and consulting crossing, bridges, etc., over creeks.

Q. That is, Mr. Fobert told you, for instance, that you went up to Station 570?

A. Yes, sir.

Q. That is the way you knew?

A. Yes, sir.

Q. Now, Mr. Griswold,—

worked for, says in his complaint, that there was submitted to him a map and profile, what do you understand he meant was submitted to him?

A. A map and a profile.

Q. This is a profile isn't it?

A. Yes, sir.

Q. What would you understand by map?

A. A plan showing the horizontal arrangement of the line.

Q. That is how far up the hill it goes and how far down?

A. No, not at all. Showing its position relative to land lines such as corners, etc.

Q. That is, that would come nearer telling you where on this ground it was to run, that tells you more than the profile about that, doesn't it?

A. It would depend on the map. If it were a topographic map, it would; if it were not a topographic map, it would not. What is the purpose of the map, then?

A. They are made for various purposes; a right of way map is made to show—

Q. Not a right of way map.

A. That is one type of map we deal with; a topographic map is made for marking projections and locations.

Q. What is a location map?

A. A location map is usually a topographic map but not always.

Q. If the contractor said in his complaint that he was furnished with a map and profile you would understand then that he was furnished a map in addition to this profile, wouldn't you?

A. I would infer that way.

Q. That would be the way you would under-

stand it. Suppose the contract said that the engineer—the engineer of the employer—that is, of the Whitney Company in this case “assumes through this warning that the contractors have examined the ground over which the railroad is to be built and know that at the time he entered into this contract”—should be “they,” of course—“the amount of work to be done, the difficulties to be accomplished, the hardness of all material to be moved, handled and put in place, together with all other work to be done, and the quantities thereof to bring the railroad to a full and satisfactory completion by the time herein set forth for its completion. The contractors accept this work solely and unreservedly upon their own information, and without reference to any preliminary estimates of quantities, profiles, or other papers handed to bidders before the contract for doing this work is let, and the chief engineer reserves the right to alter and change the alignment, grades, forms and methods of construction as shown on the maps and profiles and he may increase or decrease any and all approximate quantities as shown on the preliminary estimate and the contractors hereby waive all claim to any anticipated profits, or damages owing to any such changes.” Now, first, I will ask you, with these words “shown on maps and profiles,” would you understand that something else had been submitted ther than this profile?

A. Yes.

Q. You would also understand that a person

entering into this contract would know that the alignment could be changed?

A. Yes.

Q. You would expect that it would be changed, that is, that it could?

A. That it might.

Q. You would expect that it might be changed by a provision like that?

A. Expect that it might be.

Q. You would be warned ahead of time that it might be changed by a provision like that?

A. Yes.

Q. You would be warned that the alignment might be changed, for instance?

A. Yes, sir.

Q. Knowing that roadbed is intended to be constructed somewhere along the hillside, you would know that a slight change in the alignment might work a great change in the quantity to be moved, wouldn't you?

A. Yes.

REDIRECT EXAMINATION

Questions by MR. DOBSON:

Q. You would also understand, Mr. Griswold, that would be the very reason that the contractor taking the work would consult with the engineer?

A. Yes, sir.

Q. Now, before you went down there, did you see a profile of this work?

A. Yes, sir.

Q. And what did you do with that profile?

A. I had a photograph.

Q. You had a photograph made of it?

A. Yes, sir.

Q. That is what you call a photostat?

A. Photostatic copy.

Q. Was that made in such a fashion that it would last a definite length of time?

A. It won't last very long.

Q. One other question I overlooked, did you pay particular attention to what is called waste material along this roadbed?

A. Yes.

Q. Where would you most likely find waste material?

A. Where would I most likely?

Q. Yes; where would it be, usually?

A. Well, it would be near the mouths of the cuts where it occurred, in all probability.

Q. And as you were going up the line, you made a particular examination to see whether or not there was any waste, didn't you?

A. Yes, sir, that was my purpose.

Q. Did you make any estimate of the amount of waste material that was along the line?

A. No, sir, there was very little waste material along that line.

Q. About how much would you say?

A. Maybe two hundred yards, maybe a thousand, possibly two thousand.

Q. Just tell the Court how many places you saw this?

A. Well, there is a small amount of material which may be waste, it is a spoil bank, at this graveyard cut they talk about. The reason I call it by that is that there is a coal bunker there, and there have been material taken from the foundation for this coal bunker, and I was informed that they made this bank, so I can't say this is true waste material, but there is a bank of material there that is not the bank of the railway, and what is called either spoil or waste. And there are several places along the line there where there are small amounts of material that waste from cuts, or may have been simply lost from the dipper of the steam shovel as it was loading the may have come from slides, or that may have been cars.

RECROSS EXAMINATION

Questions by MR. FREED:

Q. Mr. Griswold, on your inspection trip up there Tuesday, did you have any way of telling whether or not the contractors, the plaintiff in this case, excavated more material than was necessary?

A. Excavated more material than was necessary? Apparently not. Apparently they did not.

Q. I say, you mean to say from this inspection trip, you could tell whether or not they cut out forty feet in one place where they could have cut out twenty—just as a crude example?

A. Well, there was no more material excavated than is in those fills; evidently all the material excavated was required and apparently more was required, for some of these fills.

Q. You don't know whether or not more material was excavated than the cross section stakes required, do you?

A. Oh, no.

Q. You don't know anything about that. All you know is that here in 1923, October, 1923, looking at a roadbed that was built in 1919 and 1920, you didn't see what you term waste material lying around?

A. That is a fact, yes.

Witness excused.

MARK SWEENEY, a witness called on behalf of the plaintiff, being first duly sworn, testified as follows:

DIRECT EXAMINATION

Questions by MR. DOBSON:

Q. What is your business, what business are you engaged in?

A. In railway and highway construction.

Q. How long have you been engaged in that line of work?

A. Oh around about twenty years.

Q. And what class of construction, railroad work or logging railroad work?

A. Railroad work, logging roads and highways.

Q. In the state of Oregon?

A. Oregon, Washington; worked in British Columbia, Idaho.

Q. Have you had experience on what we call the west slope of the Pacific Coast here?

A. Yes, sir.

Q. That is in the region similar to work done here in Tillamook County?

A. Yes, sir.

Q. I will ask you whether or not, Mr. Sweeney, you had anything to do with the construction of this roadbed that is now in controversy here?

A. I was, in clearing right of way.

Q. With whom did you make your contract for that work?

A. Mr. Norris, Whitney people.

Q. Do you remember about when that contract was entered into?

A. It was around somewhere about the last week of January, 1920.

Q. Who was present, Mr. Sweeney, at the time you signed that contract?

A. Mr. Rajotte.

Q. Was that contract reduced to writing?

A. No, sir.

Q. Just verbal contract. Now, Mr. Sweeney, will you just tell the Court the conversation that took place between you and Mr. Rajotte—who was present for the Whitney Company?

A. Mr. Norris.

Q. Mr. Norris,—between you three?

A. Well, I couldn't remember the words, but we

were—I was trying to make a price with Mr. Norris. We finally agreed at \$260.00 an acre to clear the right of way from Kilches River to some station ahead.

Q. Up the line?

A. Yes, sir.

Q. Now, could you just for the purpose of getting this into the record, indicate the stations between which you took contract to do the clearing?

A. Yes.

Q. That was above the Kilches River, I understand?

A. Yes, sir.

Q. That is the Kilches River here. Kilches River is that Station 234?

A. Yes, I remember.

Q. What station was that?

A. About 276, if I remember right, is where I started. There was a little border down there we widened. I don't just remember where that was, but 276 was the first stake, I remember.

Q. Then how far did you go?

A. This was—

Q. I want to get the furthestest you went.

A. I went to 610, or somewhere around there, I don't exactly remember the station.

Q. Now, Mr. Sweeney, at the time you made this contract, had you been out upon this work, had you examined it?

A. Yes, sir.

Q. And beginning now at Station 276, had there been any clearing done at that point?

A. Yes, sir.

Q. And starting at Station 276, how far had this clearing been done at the right of way?

A. Up to about 370 or 375.

Q. 370 to 375?

A. Somewhere around.

Q. Now, this contract that you took then, as I understand, was for additional clearing? Is that a fact?

A. Well, the first part of it looked like additional clearing, but it was flat acreage.

Q. But was additional clearing?

A. The first part of it was really—

Q. What part of it? What part of that was flat? Just indicate on the profile about how much was flat.

A. I didn't get your question.

Q. Read as follows: "Now this contract that you took then, as I understand, was for additional clearing, is that a fact?"

A. No, it wasn't for additional clearing, what I would term, it was for the whole clearing.

Q. That is, your contract covered all the clearing?

A. Yes, sir.

Q. Now you said beginning at 270.

A. 276.

Q. Was that what you call flat clearing in there?

A. The reference I made to flat was to a flat price to cover the whole clearing.

Q. I see, a flat price for the entire clearing?

A. Yes.

Q. Now beginning at station 270, was that for additional clearing at that point?

A. Yes, sir.

Q. And you say was cleared as far as 375?

A. Yes.

Q. When you took this contract?

A. Yes, sir.

Q. Then from 270 to 375 was the additional clearing, was it not?

A. Yes, sir.

Q. Now, Mr. Sweeney, before we pass this conversation, what was said between you and Mr. Rajotte and Mr. Norris at that time with reference to the manner in which you were to be paid?

A. Mr. Norris asked Mr. Rajotte to carry my payroll, which was settled.

Q. That was settled at that time. Now after this contract had been made, about when did you start in on this work up there to do the clearing? About what date?

A. We worked five or six days in January.

Q. That is about the time you started. Where did you commence your operation?

A. 276, somewhere up there. I wouldn't be dead sure of the station.

Q. The clearing that you did there, just about how wide a strip did you clear, as you remember?

A. Well, at the first stake practically nothing.

Q. That was the beginning point?

A. Yes, and it run out and varied somewhere,

oh seven, eight, ten, fifteen feet. I haven't got data on just the distance.

Q. Before you undertook to do this clearing did they set stakes there to indicate where you would do the clearing?

A. I had stakes.

Q. Were there any other stakes set at that time, that you know of?

A. Well, yes, was location, and you see where the right of way was staked before, where I could tell how much farther I went out from the edge of that.

Q. Do you know what center line stakes are?

A. Yes.

Q. Were those changed?

A. I don't know.

Q. You don't know about that? But as I understand, what you call right of way stakes?

A. Yes.

Q. And then center stakes?

A. Yes.

Q. Now the stakes you know were changed were right of way stakes?

A. Yes, there were stakes set out farther than the other right of way.

Q. On this point I think the evidence shows, and I think it is understood that that roadbed was following along the side of the hills, the contour of the hills?

A. Yes, sir.

Q. On that additional clearing which you did, which way did that go?

A. On the first end it was on the upper inside.

Q. Yes, and as you got farther up it dropped to the other side, is that the situation?

A. Yes, it did, farther on.

Q. Now, beyond that point, beyond station 375, did you do any of what we term additional clearing, that is clearing where there had been clearing done before you went on the work?

A. Yes, I remember one instance in particular; between 505 or somewhere in there, about eleven stations in there; 505 to 515, I think. That is a considerable change.

Q. Considerable change at that point?

A. Yes.

Q. How do you know that?

A. Because there was some very heavy timber and lots of bushes.

Q. Now, Mr. Sweeney, referring back to station 276 and 375, what would be the cost of the clearing you did there, that additional clearing, as compared with the original or virgin clearing?

A. If you had asked the estimate on just the additional clearing, or would you want to apply to the whole clearing?

Q. Either way you want to apply it?

A. I would say about ten feet additional, owing to the way they had the clearing there. They didn't dispose of their brush and logs by burning, they were piled to the side, they were piled right on the edge of

the right of way, and I would say it cost at least two and a half times as much for ten feet than it would originally, because we had to remove the debris that was taken off the other part, take it away, besides clearing the natural growth on the extra ten feet.

Q. Was that the condition you encountered on these upper stations, say about 510?

A. Yes.

Q. That it required more time to do that work?

Q. Now did you continue on that work after the contractors were through up there?

A. No.

Q. You suspended operations when they suspended, is that a fact?

A. Yes, sir.

Q. I understand you to say that a request was made by Mr. Norris that the plaintiff in this case handle your account on the payroll?

A. Yes.

Q. Now was that done all through this work?

A. As far as I know, yes.

Q. Did you ever receive any remittance direct from the Whitney Company?

A. Yes, sir.

Q. And do you remember about what amount you received from the Whitney Company direct?

A. About.

Q. What was that?

?? A. There was a check for a thousand dollars, a thousand and two, I think, and some odd cents.

Q. Isn't it a fact it was \$1002.03?

A. It may be; very close.

Q. Did you ever have any conversation with Mr. Norris about that check?

A. Yes.

Q. When and where?

A. In his office at Idaville.

Q. What was the occasion of that conversation?

A. Well, as the check was mailed to me direct, and the fact that Rajotte, Fobert and Winters was carrying my payroll, I went to see Mr. Norris about it.

Q. What was said?

A. I asked him how about it, and he says, "That is yours."

Q. Did he say it applied upon your contract for clearing here?

A. No, sir. In the meantime I was putting in culvert for Mr. Norris.

Q. That was a separate contract?

A. Yes, sir.

Q. And was that the contract, or were you carrying on this culvert work during the time the plaintiff was engaged on this work too?

A. Yes, sir.

Q. Now with respect to your payroll for the culvert contract, who was carrying that payroll?

A. There was no distinction made.

Q. Was the plaintiff in this case carrying your payroll on this culvert work too?

A. Yes, sir.

Q. When did you make this contract with the Whitney Company for that culvert work?

A. Well, the latter part of May 1920.

Q. Did Mr. Rajotte represent the plaintiff in this case, did he know about that contract?

A. He was not present.

Q. He was not present at the time? Do you know who had the contract for constructing the culverts?

A. There was none before I started.

Q. Now when you took this contract did you have any conversation with Mr. Norris as to who was to carry the payroll for the culvert contract?

A. No.

Q. Did the \$1002.03 that you received direct from the Whitney Company—did that pay you in full for your culvert work?

A. No, it might have at that time, the estimate.

Q. What I want to bring out, did you receive any money from the plaintiff in this case during that construction work, which would apply on your contract for culvert work? That is, did any part of your pay for that culvert work come from the Rajotte-Winters Company? Or, put it another way: I understand you to say they carried your payroll?

A. Yes, sir.

Q. On the culvert work, as well as on the contract for clearing?

A. Yes, sir.

Q. So then at the end of each month when you

turned in the time of your men, you received that amount from the Rajotte-Winters Company??

A. Yes, sir.

Q. And that was on the culvert work as well as on the clearing work?

A. Yes, sir.

Q. Did you remind Mr. Norris of that fact when you had this conversation?

A. No.

Q. Mr. Sweeney, what was the main purpose of your seeing Mr. Norris at the time you discussed with him the fact that you received this check?

A. Well, I wanted to know how to trace it, what it meant.

Q. You wanted to determine whether to apply it on your culvert work or on your other?

A. Yes, sir.

Q. Is that the first time you ever went to Mr. Norris for the purpose of arriving at what was due you on each of your respective contracts?

A. The first time?

Q. Yes.

A. Yes, sir.

MR. FREED: We don't mind, if Your Honor wants to hear this, but I would like to know the relevancy of it.

MR. DOBSON: I should have explained there are two causes of action, and Mr. Sweeney will not be able to be here all the time.

MR. FREED: This is on the second cause? I didn't understand, that is all right.

Q. Mr. Sweeney, have you had a complete settlement with the plaintiff or the Whitney Company for your work down there on this clearing and grubbing contract, and on the culvert contract?

A. No, sir.

Q. Have you met Mr. Norris or any representative of the Whitney Company since you were through there, for the purpose of discussing final settlement?

A. I have met Mr. Norris, but I couldn't get—well, what I would call, a chance to thrash it out with him from the statements, and get together.

Q. Why not?

A. I don't know. I was here in the court room.

Q. Did you make an attempt to do this soon after you were through down there?

A. The first opportunity, yes sir.

Q. That was after the plaintiff in this case had suspended its operation?

A. Yes, sir.

Q. Did you go to the plaintiff in this case and attempt to secure a settlement?

A. I have got a statement from them—a statement.

Q. From them. And what does the statement show, if you know?

A. Shows that I was in the hole.

Q. Shows you were in the hole on the work?

A. On the work.

Q. Did Mr. Norris advance that as a reason at

any time you tried to make a settlement with the Whitney Company, for not settling with you?

A. Never heard a word, not anything.

Q. The matter stands just that way now?

A. Just that way.

CROSS EXAMINATION

Questions by MR. FREED:

Q. If Rajotte, Fobert, Winters, or Rajotte-Winters, was carrying you payroll, Mr. Norris would have no right to pay anything to you, would he? Do you understand what I mean? What right would you have to ask Mr. Norris to pay you anything if Rajotte, Fobert, Winters was carrying your payroll?

A. I didn't ask him.

Q. Then he doesn't owe you anything? I don't want to confuse you.

A. No, sir.

Q. But you say that Mr. Rajotte was to carry your payroll. That means that he was to—the payment was to be made to him—doesn't it? Is that what carrying the payroll means?

A. Not altogether. He was to pay my men, the men that were working for me.

Q. But who was the Whitney Company to pay for what work you did? Who did they pay? Who were they supposed to pay, you or Mr. Rajotte?

A. The way the matter stood, they were to pay Rajotte, Fobert & Winters.

Q. Then why should you try to get some money from Mr. Norris?

A. I didn't try to get any money from Mr. Norris.

Q. You were trying to make some kind of a settlement with him, you said.

A. I wanted to know sure how we stood.

Q. You wanted to check up?

A. Certainly.

Q. You wanted to check Mr. Rajotte, didn't you?

A. I wanted to check up how we stood on it, certainly.

Q. I am not criticizing you, I want to know what you were doing it for. You wanted to know whether Mr. Rajotte should pay you, or we were going to pay you, didn't you?

A. Well, certainly, we should get our estimates, yes. I couldn't settle with any of them without getting estimates from Mr. Norris.

Q. Mr. Rajotte paid all your men?

A. Yes, sir.

Q. If there was any surplus he was supposed to pay you, is that what is meant? I just want to understand what is meant by carrying the payroll.

A. We had no understanding on it, you see.

Q. What did you mean by carrying the payroll? What was he to do?

A. Carrying the men.

Q. Where was he to get the money, where was Rajotte to get money?

A. He was working for the Whitney Company, absolutely.

Q. The plaintiff. I have been speaking of Mr. Rajotte.

A. They were doing the work for the Whitney Lumber Company.

Q. The plaintiff was to pay your men?

A. Yes.

Q. And the Whitney Company was to pay the plaintiff, you say, for the work you did, is that right?

A. We understood reimbursed for the payroll, as far as we understood.

Q. How would you make any money out of that, where would you get any money?

A. Well, on the estimate, I would take the balance from Rajotte, Fobert & Winters account, and the balance would be due me on the estimate.

COURT: From whom?

A. From the Whitney Company.

COURT: You were working for the Whitney Company?

A. Sure. Mr. Rajotte, or, call it the plaintiff, was carrying my payroll for the work, because I didn't have the money myself. It was either up to the Whitney Company or Mr. Rajotte to carry my payroll.

COURT: (To Mr. Dobson) Was Mr. Sweeney your subcontractor?

MR. FREED: Yes, he was.

COURT: That is, your people owed him. He was working for the plaintiff, and not the Whitney Company?

MR. FREED: That is what I am trying to get the witness to say.

A. That is a point we never discussed. We had no written contract, you see. The fact of the matter is we had no business with Norris.

COURT: I understand the plaintiff was to clear the right of way as a part of their contract?

A. Yes.

Q. And they sublet that work to Mr. Sweeney?

MR. DOBSON: Just to make it clear, the contract says in substance this: That the contractor, the plaintiff in this case, may sublet a part of this contract, but the contract must really be made with the Whitney Company.

MR. FREED: It doesn't say so.

MR. DOBSON: Says so in substance.

COURT: Approved by them?

MR. FREED: Yes.

Q. Now in addition to the understanding you had about clearing, you spoke of a culvert building contract.

A. Yes, sir.

Q. You made that with the Whitney Company, that agreement to build a culvert?

A. Yes, sir.

Q. When you received the check for \$1002.03, do you remember what that voucher said? You know what a voucher is. Do you remember what was on that voucher?

A. Yes.

Q. What was it?

A. On the culvert.

Q. For culvert building?

A. Yes.

Q. Did you know anything about the payments that the Whitney Company made to Mr. Rajotte direct, the Rajotte-Winters Company, in regard to clearing and culvert building? You don't know about that, do you?

A. No, sir, not directly.

Q. You have no first hand knowledge of that?

A. No.

Q. Do you remember requesting in writing the Whitney Company to pay all due you to Rajotte-Winters Company?

A. Yes, sir.

Q. You did request them to do it?

A. Yes, sir.

Q. And that was after you had received this payment made to you direct?

A. Yes, sir.

Q. So it was not until after they had paid you this money direct that you requested them to make payments to Rajotte-Winters?

A. Yes, sir.

Q. Now how much was Mr. Rajotte getting for handling your payroll, or the Rajotte-Winters Company; what profit were they making out of you?

A. There never was anything said about it.

Q. Sir?

A. I don't know.

Q. What profit were they supposed to get?

A. Hasn't been anything said, never was, the question never came up.

Q. Did you understand that Mr. Rajotte was to carry, or the Rajotte-Winters Company, the plaintiff, was to carry your payroll and not make anything out of it?

A. We didn't discuss it.

Q. I know, sir, but what did you understand about it?

A. Usually they get a percentage.

Q. Usually?

A. Yes.

Q. Didn't you expect the plaintiff to get ten per cent profit, isn't that the usual profit?

A. Whatever was usual, I expected.

Q. It was a silent understanding. You knew that, but you never had any direct words about it. You have worked for Mr. Rajotte subcontracting, since then, haven't you, and before that? You have done other work under Rajotte-Winters, haven't you?

A. Before that.

Q. Had they ever carried your payroll?

A. Yes, sir.

Q. They charged you ten per cent for carrying it, didn't they?

A. No, sir.

Q. Why did you think they were going to do it this case?

A. It is usually the case.

Q. And you expected in this case to pay it?

A. They usually do.

Q. I say, you expected, in this case?

A. I didn't, I didn't know. There was no question said about it, but as a rule they usually do, contractors do; usually, but not always.

Q. Usually get a profit from the sub-contractor?

A. Yes, sir.

Q. Did you hear Mr. Norris ask Mr. Rajotte to carry your payroll?

A. Yes.

Q. When was that?

A. In the Lewis Building, here in Portland.

Q. You haven't any idea about the first of the year; before or after the first of January, 1920?

A. When we settled on the price.

Q. Well, sir, at what price did they agree to pay you for clearing the land? How much did they agree to pay you?

A. \$260 an acre.

Q. That was for just clearing?

A. Yes.

Q. No grubbing?

A. No.

Q. Who fixed that price?

A. Well, between us there we made out the price.

Q. Mr. Rajotte was in on that price fixing, wasn't he?

A. Well, he sanctioned the price

Q. He sanctioned the price.

A. Yes.

Q. He thought that was a fair price?

A. Yes.

Q. Then as I understood it, Mr. Sweeney, though this contract between the Whitney Company and Mr. Rajotte fixes the unit cost for clearing at \$180 an acre, Mr. Rajotte knew and sanctioned—knew that it was just and sanctioned that you should get \$260 an acre? That is right, isn't it?

A. Well, he didn't think it could be done at any less.

Q. In other words, Mr. Rajotte knew that the clearing couldn't be done at less than \$260 an acre?

A. At this time.

Q. What do you mean at this time?

A. When I took the contract.

Q. What has time got to do with it, tell the Court?

A. I don't know what he thought before.

Q. You mean at that time he thought?

A. Yes.

Q. I thought you meant clearing at this time. When was the contract made?

COURT: The 20th of January he said.

Q. The 20th of January Mr. Rajotte felt that the clearing was worth \$260 an acre, and that it couldn't be done for less, didn't he? That is your understanding, I mean?

A. Yes.

Q. Who brought you into the job? Did Mr.

Norris go get you, or did Mr. Rajotte suggest that you be employed to clear that land?

A. Mr. Rajotte, I believe, told me that there was——

Q. You were Mr. Rajotte's friend, in other words?

A. Well, I have been working for Mr. Rajotte.

Q. You never had worked for Mr. Norris before that, had you?

A. No.

Q. Well, did you know Mr. Hawkins, Russell Hawkins, president of the Whitney Company, before this time?

A. No.

Q. You never talked to him about going into the work?

A. No.

Q. All your conversation was with Mr. Norris? Did you do all the clearing that was done before the plaintiff's forces started to work there?

A. No, sir.

Q. Mr. Wood did some, didn't he?

A. I don't know.

Q. But somebody else did some?

A. Yes.

Q. Well, had you finished your work along the place where you cleared, before the plaintiff started working there? Do I make myself clear?

A. No.

Q. Had you finished clearing along the roadbed

before the plaintiff came up to do this work in that part?

A. I believe in most cases, I believe in most all.

REDIRECT EXAMINATION

Questions by MR. DOBSON:

Q. Now Mr. Sweeney, I think the Court has the impression from your answers to Mr. Freed that you had nothing to do with determining the price you were to be paid for clearing this land up there, is that a fact?

A. No.

Q. Well didn't you go down and look at the work before you made a price?

A. Yes, I was down on the work.

Q. Now you said on direct examination that part of this work was flat contract basis. What did you mean by that?

A. That whole thing was on a price. When you asked me about extra clearing.

Q. I am talking now about the work that you referred to was on a flat basis. What did you mean by that?

A. A certain price per acre for everything.

Q. What was that price?

A. \$260.

Q. That included this additional clearing also?

A. Yes.

Q. Now the fact that you had this extra amount

of work to do in connection with this additional clearing, did it have anything to do with the increase in price?

A. Sure.

Q. Isn't that the real reason why you got \$260 an acre?

A. That is one reason why I asked.

Q. And even at that price you lost money on the work?

A. Yes, sir.

Q. Now, as a matter of fact, Mr. Sweeney, how much did Mr. Rajotte have to do with the price you got on that work? How much did Mr. Rajotte have to do in fixing the price you were to get for that clearing?

A. I went down—I don't know that he was—that he had much to do with it.

Q. Did he suggest the \$260 an acre himself?

A. I would have to give you a little more explanation in your answer, something else came up before.

Q. All right, go on.

A. I had already before given Mr. Norris a price of \$320 an acre, first, when I went down and examined the work.

Q. That is, before you talked to Mr. Rajotte about it?

A. Yes. Then when I came back to Portland, as I remember, Mr. Norris wrote me a note telling me it was too much, and he would like to get together and see if I could be a little easier on it. In the mean-

time I came to talk to Mr. Rajotte, and in that way we discussed it, you see, in order to bring me down to the figures, and in that way we agreed.

Q. It was Rajotte's idea to get you to do the work for less, was it not?

A. Yes sir.

Q. Did Mr. Rajotte have anything to do with your fixing the price of \$320 an acre that you first made to Mr. Norris?

A. No.

Q. Did he know at the time you submitted that price, that you had submitted any such price?

A. No.

Q. Did you know Mr. Wood, the gentleman Mr. Dreed referred to?

A. No.

Q. Now as I understand, you didn't do all of the clearing of that right of way?

A. No, sir.

Q. All that part, we will say back of 276, that was all cleared, was it, before you went up on the work?

A. Yes, sir.

Q. And just the parts that you have mentioned, is the only clearing you had to do?

A. Yes, sir.

RECROSS EXAMINATION

Questions by MR. FREED:

Q. How much did Mr. Rajotte think you ought to get for that clearing?

A. Well, I don't remember where the discussion came to.

Q. You remember what Mr. Norris told you, you ought to remember what Mr. Rajotte told you. You say Mr. Rajotte wanted to do it—or Mr. Norris, I mean, wanted you to do it for less than \$320, you said?

A. Yes, sir.

Q. Then you spoke to Mr. Rajotte, and the final conclusion was \$260. I would like to know what price Mr. Rajotte thought was fair?

A. \$250, as I remember.

Q. Mr. Rajotte thought \$250 was fair?

A. As I remember, I think he said \$250.

Q. But he thought \$250 was about as cheap as the clearing could be done for?

A. At this time.

Q. At this time, I understand, in January, 1920?

A. Yes. You see, the way it was fixed—

Q. Just to get this clear. You spoke of having talked to Mr. Norris before talking to Mr. Rajotte. You said that in answer to counsel's question. You don't mean you talked to Mr. Norris about clearing before you even talked to Mr. Rajotte about clearing, do you?

A. No, no, but it was in Portland, before we met Mr. Rajotte, about the price.

Q. The first proposition about the clearing came from Mr. Rajotte?

A. I believe so.

Q. Now you had not done any clearing before that time, before January, 1920, is what I am to understand?

A. On that work.

Q. Along the roadbed, I don't care what part.

A. No clearing on right of way?

Q. On this road.

A. Oh, no, no.

Q. You had done none before that? That is the first clearing?

A. That is the first work I done on the road.

Q. Explain to the court then, if you will, why clearing would be more expensive at that time than at any other time.

A. What I mean by it, your Honor, was they had already cleared sixty foot right of way, it might be about a mile, or a mile and a half. Then there were stakes projected out about ten feet, or eight feet, or four feet, or one foot, all along the edges. I claim that that ten feet, or five feet, whatever it is, would cost two, three or four times as much as would naturally in the original state, that increased your cost.

Q. It would cost four times as much?

A. Some instances would.

Q. Then you think that a fair price to clear a solid mass of trees would be \$60 an acre?

A. No. As compared to the smaller percentage of this, compared to the whole.

Q. What is a fair price for the clearing in the original instance?

A. With heavy clearing, right now, about \$300 right now, or four or five, right now.

Q. Then I understand you to say—I don't believe you understood me—you now say it cost more to clear a solid mass of trees—I believe you call it virgin clearing—than it would to clear along the edges, didn't you?

A. No. You asked me the price now, of clearing.

Q. I don't mean today. I am not referring to today. I am talking about what would have been a fair price at the time you made that agreement, to have cleared the land if you could have gone in and cleared a solid mass, virgin clearing, I believe you call it.

A. It could be done a little cheaper.

Q. How much cheaper? How much would you have been willing to do it for?

A. Not much less than what I worked right there.

Q. Well, was just about the same when it comes down to it?

B. But that covered my increased cost. Of course I bid too cheap on that, because I was jewed down on it.

Q. In other words, really at that time a man couldn't clear what you were proposing to clear, for \$260 an acre, and come out on it?

A. Well, a man could just about break even.

Q. Then what would you say it would cost—a fair price, to have cleared solid clearing? I just want to get a statement from you.

A. What you would want to get, how much the increase—

COURT: No, no. Suppose that right of way had not been cleared at all.

A. I understand.

COURT: What would have been a fair price to have gone in there and cleared it?

A. Right through now, where that extra clearing was, that was light there. You have got to see the ground and the different growths of timber. Right there, where that extra clearing was, was light there, it was lighter than the timber ahead. You have to figure on that, and see what it looks like.

COURT: Take the entire tract.

A. It would lessen the cost. It would lessen the cost about—well on the whole—the real cost I know it would increase the cost about \$50 an acre.

Q. Then you would say the real cost, the actual cost of doing that work would have been about \$210 an acre?

A. Yes.

Q. That is what you mean to tell?

A. Would increase it.

Q. You mean then, that about \$210 an acre would be the cost of clearing if there had been no previous clearing?

A. Yes.

Q. Now, didn't you do some virgin clearing?

A. Yes.

Q. And you got \$260 an acre for doing the virgin clearing?

A. Yes.

Q. Were you paid too much?

A. No.

Q. Then wouldn't \$210 be too little?

A. Well, the only way you could do that would be to classify the clearing, the only way you could get at it. I would not take the contract on an average price for the whole thing. You see you would have to classify the clearing in order to see whether I got too much for the virgin clearing, or for the other.

Q. Then when you said \$210 an acre—I understand what you mean on the other proposition when you said \$210 an acre would be fair—you meant as an average, didn't you? You meant \$210 right on through? You didn't mean to take any particular part and say \$210 was fair?

A. No.

Q. You meant an average?

A. Yes.

REDIRECT EXAMINATION

Mr. Freed asked you if you had made an agreement or were paying the plaintiff in this case any percentage for carrying your payroll?

A. Yes.

Q. You didn't have any contract with the plaintiff to carry your payroll, did you, whereby you were to pay them a percentage?

A. No.

Q. You didn't want the Court to understand that, did you?

A. No, no, was never a question, because the fact of the matter is I never pay them personally. He has been carrying my payroll for years.

Q. Now, Mr. Sweeney, I think the point the Court wants to know, and Mr. Freed was trying to develop here, you cleared all told about how many miles of this nine mile or twelve mile railway?

A. Must have been about five or six miles. the other part of it?

Q. You had nothing to do with the contract for

A. No.

Q. Suppose you had been called in to make a price for clearing that right of way as a whole. Could you now tell the Court what price you could have made?

A. Yes.

Q. Had you seen it before it was cleared?

A. Well, no; I didn't see all of it before it was cleared.

Q. Then how could you tell the Court now what average price you could clear the entire right of way for?

A. I base it upon the price it would cost me on an average, right through, that is the only way we would contract.

Q. As I understand, when you went upon this contract the right of way had been cleared up to about the point where you started?

A. Yes, sir.

Q. And all that part back towards the S. P. tracks had already been cleared?

A. Yes, sir.

Q. Now, you don't know anything about the extent of the clearing done there, do you?

A. No, I didn't pay much attention.

Q. For all you know it might have been cleared for \$100 an acre?

A. I don't know.

Witness excused.

DAVE KRAFT—A witness called in behalf of the plaintiff, being first duly sworn, testified as follows:

DIRECT EXAMINATION

Questions by MR. DOBSON:

Q. Mr. Kraft, what is your occupation or business?

A. At the present time?

Q. Yes.

A. Right now I am occupied with Rajotte-Winters.

Q. How long have you been in their employ?

A. About eleven months.

Q. I will ask you whether or not you were in their employ during the time they were engaged in the construction of this roadbed for the defendant, the one we have been talking about in this case?

A. I was not.

Q. I will ask you whether or not you were employed by anyone and engaged in some capacity connected with the building of that roadbed at that time?

A. I was employed by the Whitney people.

Q. At that time. When were you first employed by the Whitney people?

A. 1916.

Q. Without going into too much detail, just tell the Court briefly what you were doing at that time.

A. Why, I was working in the engineering department, chain man.

Q. And as chain man just what were your duties?

A. To measure out the center line for this railroad.

Q. State whether or not at about that time you measured out the center line for this railroad that is now under discussion?

A. Not all of it.

Q. About how far?

A. Well, probably about seven miles of it.

Q. Seven miles? Can you take the profile and

just indicate about where that would be, mentioning the station numbers? You can refer to the switch, or something you know about.

A. I might have misunderstood your question.

Q. That would be about what point?

A. Very few hundred feet above Downs Creek.

Q. That is station 380. Now at that time who was chief engineer of the road, or do you know?

A. Mr. Cole.

Q. Now did he accompany you at this time, that is, the crew you were with?

A. Yes, sir.

Q. Was he with you usually when you were making this survey?

A. He was.

Q. And I will ask you this. At that time did you set what is called center stakes?

A. We did on our location, yes.

Q. Now was that the extent of the work you did there in 1916?

A. No, sir; we located up Downs Creek.

Q. Now, Mr. Kraft, does that take you away from the line of this roadbed?

A. Yes, sir.

Q. That would have nothing to do with this?

A. It does beyond Downs Creek, that is, the mouth of Downs Creek.

Q. When were you next employed by the Whitney Company?

A. 1917.

Q. In what capacity were you employed at that time, and what did you do?

A. Same capacity, and doing the same line of work, except we didn't do any location.

Q. What do you mean by not doing location?

A. We ran preliminary lines.

Q. What does that mean?

A. Well, I don't know whether I can make it clear or not. All I can tell you, we ran a line, more or less.

Q. That was from what point?

A. That was from——

Q. From Sam Down's Creek?

A. No, beyond Sam Down's Creek. We ran preliminary lines up Kilches River, but I can't tell just to what point, and we took up this point the next year and continued on.

Q. What I am referring to, is this line, these surveys that were being made, they were about to build this particular roadbed. I am not interested in any line you ran that would diverge from those. So you started in 1917 about Sam Down's Creek?

A. No, we started beyond there, I should judge probably—well, I don't know for sure—maybe three or four miles, something to that effect.

Q. How far did you go with the survey of preliminary location?

A. We continued that line probably four miles farther.

Q. That would take you about up to what point?

A. That would take us up a short way beyond what we call Little South Fork.

Q. Can you find on the profile a station number?

A. No, it doesn't show on the map.

Q. South Fork River doesn't show on this profile?

A. I couldn't tell you what station.

Q. For the purpose of refreshing your memory, were you on this work at the time the plaintiff, that is the Rajotte-Winters Company, were constructing?

A. Yes, sir.

Q. Were you there at the time they ceased operation?

A. Yes, sir.

Q. Now bearing that fact in mind, there is a point to which you established your survey in 1917, the one you were talking about. Was it beyond that point?

A. Oh, yes, our preliminary survey was beyond that point.

Q. In other words, that is the point you mean, the South Fork?

A. The Little South Fork.

Q. Was beyond the point where the plaintiff in this case ceased operation. Now did you set any stakes in connection with this survey indicating any lines, in 1917?

A. Not on location, no sir.

Q. No stakes were set at all?

A. No.

Q. Now did you make any further surveys at any other time, or were they working on survey crews at any other time subsequent to 1917?

A. Not at any other time, no, except 1919.

Q. Now 1919 what did you do?

A. Worked in the same capacity for the Whitney people.

Q. And about what time did you enter their employ?

A. Some time in March.

Q. In March, 1919, and you were running a chain, or working on the chain, as you call it?

A. Yes, sir.

Q. What were you doing?

A. Well, at that time when I first went down in there, we did a little cross section, setting out cross section stakes and right of way stakes,

Q. Just at what point did you begin setting out right of way stakes and cross section stakes, as near as you remember?

A. About station 6 or 7, that is west of the Southern Pacific track.

Q. When you set out cross section stakes, that indicated the point at which the contractor here was to make a fill, is that it?

A. No, that was to establish the right of way.

Q. For cross section?

A. I was speaking of right of way stakes.

Q. You set out right of way stakes first?

A. Yes, sir.

COURT: You say you set out cross section stakes at 6 or 7 in March, 1919?

A. No, that was right of way stakes.

Q. That is indicating the width of right of way?

A. Yes, sir.

Q. How far did you go with that operation?

A. As far as Sam Down's Creek.

COURT: Down's Creek is about station 378?

MR. DOBSON: That is station 380.

Q. Now did you set any other stakes there?

A. We did.

Q. Between what points?

A. We set some cross section stakes.

Q. Where did you first set cross section stakes?

A. We set some down close to the Bay, wherever we could before the contractors got in there.

COURT: When was that?

A. Spring of 1919.

Q. In setting these right of way stakes, this first operation, were there any other right of way stakes there at that time?

A. No, sir.

Q. Was there center line stakes there at that time?

A. Yes, sir.

Q. That was up as far as Down's Creek?

A. Up as far as Down's Creek.

Q. Referring back to the cross section stakes, how far did you set those, to about what point?

A. Well, we set them wherever we could, from station 8, I think, back to whatever the station at the

Bay. I have forgotten now. Station about 17 or 18, I think.

Q. From station 6 to station 17?

A. That is west of the S. P. track.

Q. Then you didn't go across the track with those?

A. Not there, but we did beyond the County Road, that would be about station 30, I think, somewhere in there, I think.

Q. It starts with a hundred west of the track?

A. It would be about—well, I should say along about 130, up to about probably 150 or 151, somewhere in there.

Q. That would be about up to what we refer to as Cemetery Cut?

A. Yes, sir.

Q. Set the stakes up to that point. Now subsequent thereto did you proceed with this stake setting operation, cross section stakes, beyond that point?

A. No, sir, not at that time.

Q. Do you remember having to discontinue setting out cross section stakes from station about 151 to four, along up the line?

A. No, I couldn't be sure. Sometime after the contractors were in there, though, and had the right of way clear.

Q. The main fact I want is, did you go beyond that with your cross section stakes?

A. We did.

Q. About how far?

A. As far as the end of the line, that is as far

—well we were beyond where the contractor finished, but how far I couldn't tell you.

Q. With your cross section stakes?

A. The cross section stakes.

Q. Did you continue with that from day to day ahead of the contractors?

A. Not always, we were not always setting those out, we had other work we had to do.

Q. But during the time you were in their employ you set cross section stakes for practically all the line which was constructed or built by the contractors in this case?

A. Yes.

Q. I want to ask you this: After having set these cross section stakes, did you ever go back and change it?

A. Well, we did in a few instances, yes.

Q. Do you remember any particular instance in which you did?

A. Yes, we did; I should think, about station 106 on up to 124.

Q. 124. You re-set the stakes in between those stations?

A. Yes, sir.

Q. Do you recall any other place where you re-set these cross section stakes?

A. No, I can't; not right at the present time.

Q. Well, as a matter of fact, do you know whether or not you did change any cross section stakes beyond that?

A. Yes, we did; at different places.

Q. But you can't at this time fix the points?

A. No, sir.

Q. Well, we will say, referring to that part of the right of way beyond the Kilches River, between that and Sam Down's Creek, or Clear Creek; just look at the profile and see if you can look at that and refresh your memory. Here is Clear Creek. That is at station 330. Kilches River is station about 234 or 5; between those points, between those two streams?

A. I couldn't tell you for sure now, where.

Q. Do you know that you did set any stakes between those stations?

A. Yes, I set stakes.

Q. I mean, did you re-set cross section stakes?

A. I think we did on a few occasions, not very often, but occasionally.

Q. But you wouldn't be able to indicate just where they were?

A. No, I would not, just now.

Q. You weren't particularly interested at that time?

A. Of course we had so much other work to do we naturally forgot about that at the time.

Q. Now going beyond Sam Down's Creek, just examine the profile as you go along—between that and Sam Down's Creek, that includes stations 330 and 380, there are two bridges in there, and apparently a cut; beginning to get rugged. Does that refresh your memory as to whether you had to re-set cross section stakes in there any where?

A. No, I don't.

Q. You can't recall?

A. I can't recall.

Q. You don't know whether you did or not?

A. I don't.

Q. Going beyond that point—

COURT: That is as far as the road was located at the time the contract was entered into.

MR. DOBSON: He said he set stakes clear along through.

COURT: I know, but that was located after the contract was entered into. Keep that clear.

A. I think we made some changes along about 460.

Q. And what was the extent of those changes, that is, running distance?

A. When we first cross sectioned that they figured it was too much yardage.

COURT: You changed in order to reduce the yardage?

A. Yes, sir.

Q. That change was made—just came as an order, and you helped carry it out?

A. Yes, sir.

Q. You didn't have any conference with the engineer, Mr. Norris?

A. I did not.

Q. Or Mr. Cole, about it?

A. No, sir.

Q. Now, Mr. Kraft, you understand the various marks on the profile?

A. Most of them, yes.

Q. Any markings on that profile indicating curves?

A. Yes.

Q. For the purpose of refreshing your memory, do you remember of making any changes in these stakes for the purpose of correcting curves?

A. Not cross section stakes, no sir.

Q. Did you change any stakes for that purpose?

A. Yes, sir, we changed our center line stakes.

Q. You changed your center line stakes?

A. Yes.

Q. Did you change any other stakes?

A. Not very apt to, no sir, not at every change, anyway.

Q. For the purpose of refreshing your memory, go back to station 260, and I will ask you whether or not you can state whether the right of way stakes were changed to that point?

A. No, I think the right of way stakes were changed probably beyond there, maybe around about 273 or 4.

Q. To what extent were they changed?

A. Well, they weren't changed a great deal. We changed our center line about 270.

Q. How far would you carry it?

A. We carried most of that change at this time up to Clear Creek, that would probably be at station about 3—well, probably about 320.

Q. And do you recall now of any other changes?

A. Yes, we changed the line over across the Clear Creek bridge.

Q. At about what station?

A. Well, I think we started in there about station 338 and continued on as far as I can remember, to about 344.

Q. Now if there are any others, Mr. Kraft, you just go ahead and state. I don't want to take up too much time on these. I want to give the Court the benefit of any changes you might have made, or rather, information as to any changes you might have made.

A. We made another change around about 510.

Q. What was the extent of that change?

A. I should judge about 800 feet.

Q. When you refer to this change there, and the one mentioned just before this, you mean by that you had once set stakes, and thereafter went in and changed them?

A. Yes, sir.

Q. And were they center stakes or cross section stakes you are referring to?

A. Those were center line stakes.

Q. That meant you were changing the center line of the roadbed?

A. Yes, sir.

Q. And the reason for these changes you don't, of course, know?

A. Well, I always thought probably it was for better alignment.

Q. You had nothing to do with making decisions where the line was to go?

A. No, sir.

Q. You were just one man with the survey crew?

A. Yes, sir.

CROSS EXAMINATION

Questions by MR. FREED:

Q. Mr. Kraft, you said that you were now in the employment of the plaintiff in this case?

A. Yes, sir.

Q. Now you told us about the change that was made in the cross section stakes between stations 106 and 124.

A. As near as I remember.

Q. In general that is right?

A. Yes, sir.

Q. Did you hear the testimony in court yesterday?

A. No, I was not here yesterday.

Q. You came today?

A. No, I was here the day before, but yesterday I was not here.

Q. Did you hear the testimony in court in regard to the plaintiff in this case going back and raising the grade?

A. Yes.

Q. Along between 106 and 124?

A. Yes.

Q. That is where the rails were under water, that is where you are referring to, isn't it?

A. Yes, sir.

Q. And that is the same change?

A. That is the same one.

Q. And that is the change where you came back and raised the grade in order to keep the roadbed and rails above water?

A. Yes, sir.

Q. And you don't want the Court to understand, do you, that any other change was made at that point than that change?

A. Well, as far as I know myself, or can remember.

Q. What I mean to say, this change you are talking about—

A. That is the change I am talking about.

Q. We have had that told before, and I want to clear that up in the Court's mind. How much work had been done on that roadbed between 106 and 124 before you came back and changed it? I know the rails were on there, but how much work had been done to build the roadbed there?

A. To build the roadbed. Well, I couldn't say for sure, but I thought it was along to about 106.

No, you don't understand. Was there a perfectly good roadbed there with track on it?

A. No, sir.

Q. Tell the Court what kind of a roadbed that was you went back and did that.

A. The roadbed in fact was a swamp, almost right through there, at that time.

Q. Did they have much roadbed built?

A. Not right in there, no sir.

Q. I am talking about 106 to 124.

A. Not right in there, no sir.

Q. Would you say then that roadbed had been completed at that point?

A. Now I am not sure whether they completed that according to Mr. Cole's ideas or not.

Q. What did it look like? Did it look like—

A. No, not to me.

Q. If you were an engineer there, would you say that was completed?

A. No, I would not.

Q. Now, you spoke of changes in the stakes. Sometimes you don't designate whether it was center line stakes or cross section stakes, and I won't go back over all that, to correct it, but I want to ask you this: Around at station, say 270, along in there, you said a change was made in the stakes. That was all cross section stakes, wasn't it?

A. That was not. That was all center line that was changed.

Q. Had the plaintiff in this case done their grading?

A. No, sir; not at that point.

Q. In other words, you made the change before they got in there to work?

A. We did.

Witness excused.

VERNE W. WINTERS—A witness called on behalf of the plaintiff, being first duly sworn, testified as follows:

DIRECT EXAMINATION

Questions by MR. DOBSON:

Mr. Winters, were you one of the stockholders and officers of the Rajotte-Winters Company, plaintiffs in this case?

A. I am.

Q. And how long have you been connected with them?

A. Since its organization in 1914. Was first a co-partnership and then a corporation.

Q. And that corporation was engaged in the general contracting business during all the time since its organization?

A. It has been.

Q. What work were you engaged in, or business, prior to the organization of this corporation?

A. Contracting.

Q. Same line of work?

A. Yes.

Q. And you have been engaged in the building of railroads, or work of similar nature, as the one under discussion here.

A. I have.

Q. About how many years?

A. About 15 years.

Q. Did you have anything to do with making the contract in this case—that is involved in this case?

A. I think I seen the contract, but I don't think I had anything to do with making it.

Q. You had nothing to do with the preliminary

negotiations leading up to the making of the contract?

A. Not very much.

Q. I will ask you whether or not you ever saw this work prior to making the contract?

A. No, I never saw it.

Q. All the information you had about the work was it came from some one else, that is before making the contract?

A. Yes, before making the contract.

Q. Were you ever upon this work during the time it was under way?

A. I was on it several times. I can't recall the exact time.

Q. Any particular reason for your going there on these occasions?

A. Once I think I went down to go fishing, and the other time I went down to look at the work; I think right after we took it or shortly after we took it I went down.

Q. It wasn't ever necessary for any reason you should go there to discuss some question?

A. No, I never had anything to do with the handling of the work at all.

Q. You had nothing to do with the management of the work under progress?

A. No, nothing at all.

Q. Mr. Winters, I want to ask you whether or not you have examined the final estimate as given to your company by the Whitney Company at the close of this work?

A. I have.

Q. And I will ask you whether or not you have examined the profile?

A. I have.

Q. Plaintiff's Exhibit I in this case. I will ask you whether or not you have taken off that profile the quantities as there indicated for the twelve miles?

A. Taken off the quantities shown on the profile, and added them up, and gotten the totals.

Q. You can show the totals, mile by mile?

A. You said twelve miles; I have taken for the twelve miles, taken at the time the steam shovel stopped working.

Q. That is as far as you completed the work?

A. Yes, sir.

Q. Now, Mr. Winters, I will ask you whether or not you have compared the quantity shown on the profile, as far as this work was completed, with the estimated quantities, as incorporated in the contract?

A. Yes, I have.

MR. DOBSON: At this time, Mr. Freed, if you have no objection, I would like to introduce this final estimate.

MR. FREED: I have no objection to final estimate at all. This was what was furnished you by the Whitney Company?

A. Yes.

Q. (Mr. Freed.) Now, what is this supposed to be?

MR. DOBSON: At the conclusion of the work

you furnished us the final estimate of the quantities moved by us.

MR. FREED: I have no objection subject to my checking these with the copies we have.

Marked "PLAINTIFF'S EXHIBIT 3."

Q. Now, Mr. Winters, I will hand you Plaintiff's Exhibit 3, which is the final estimate furnished to your company by the Whitney Company at the conclusion of this work, and I will ask you to state whether or not you took this final estimate and made a comparative statement.

A. Yes, I took the figures, I used in my comparative statement off this final estimate.

Q. Have you that comparative statement with you?

A. Yes.

Q. Is this a duplicate?

A. This is a duplicate of this.

Q. Now, as I understand, Mr. Winters, you can show the various quantities of the various kinds of materials moved for each mile as far as you completed it?

A. Yes.

Q. And also the totals?

A. Yes.

Q. For the purpose of getting that into the record, I wish you would just state what that shows—that comparative statement shows?

A. I would like to explain how I obtained the figures, as shown by the profile.

Q. Yes, you can show that.

A. On the profile they have marked mostly above the line "borrow" and cuts were represented by the quantities that are supposed to be excavated in that mile, and I have simply gone down the profile and taken each mile, and added up those figures that are shown on the profile as the total quantities in that mile. That is the way we generally arrive at quantities in any particular mile of work. Generally, when we furnish a profile, there is a summary on each mile. That is, the engineer makes what he calls a recap on each mile; that shows the quantities. They didn't do it on this profile, but you can get it by going along and taking.

Q. Did that indicate any other work you were to do?

A. These brackets here, marked "fill" supposed to represent the quantities of earth put in the fill. These arrows here are supposed to represent overhaul.

Q. Better explain that fully.

A. For instance, take this fill here. There is a line there and a line there, and this dotted line with arrow on, this borrow, 10,320—that is 10,320 yards of earth or material of some kind, whatever it is, is to be taken from the ground some place between these two lines and put in that embankment; 6,100 yards in that fill over there. That means six thousand yards of that goes into that fill. There is a little fill here marked 2,980 between these two brackets. That would mean that fill is put in right parallel to that

line, but in a different track. That really represents the material that goes in that Y, as I understand. Above up here is another bracket that has a fill, 1240. I would interpret by looking at this line that means that amount of yardage is to be put in in that interchange track. If you add up those quantities, you will find that this 1240 and 6100 and 2980 all added together make up the 10,320 that is supposed to be borrowed, and the fact that these arrows are at the end of that line would indicate that that material is all to be obtained between those two limits. Generally put on the profile to enable the contractor when he looks at it to get some kind of an idea where the engineer intends the material is to be taken from.

Q. And also to indicate the amount of overhaul that would be on the entire contract.

A. That amounts to the same thing.

Q. Just go ahead with the statement with respect to result.

A. You want me to go through mile by mile, or total?

A. No, don't do that.

COURT: Give the total.

A. Total yardage moved?

COURT: Give me excavation.

A. Common excavation—I am giving first the estimate, what was moved on the estimate; that is, 183,381.4.

COURT: As shown by the profile?

A. No, this is giving the final estimate, the Whitney Company's estimate.

COURT: That is common?

A. That is common excavation. 1587 yards that is loose rock; 7806 solid rock; total is 192,774.4 yards. That is the total of those three. No, in adding up the profile yardage I only went to Station 546, as I understand that is where the shovel stopped its operation. I simply took this quantity off the profile to Station 546, and then added them together. They are not classified on the profile. The profile just shows yardage. Does not show material—does not show kind of material. And the result obtained by that is 128,174.

COURT: That includes common, solid rock, and loose rock?

A. Yes, everything. The total increase, as I figure it, is 64,600.4. That would be about 50 per cent increase. Now, I took the overhaul, and I went through the profile and added up all the overhaul I could find. That totaled 166,987 yards.

COURT: That is from the profile?

A. That is from the profile, yes, and actually given us in the estimate was 680, 229, or an increase of 300 per cent in the overhaul quantity. You understand I only took those quantities on the profile to Station 546.

Q. Now, those figures, they only cover the work for the miles you covered?

A. Yes, that is the idea.

Q. Now, Mr. Winters, did you ever have any conversation subsequent to the time you discontinued

work upon this roadbed, with Mr. Norris, or Mr. Hawkins, or any other official of the Whitney Company?

A. I had lots of conversations with them, but I can't remember exactly what they were.

Q. Do you ever remember having a conversation with them where you discussed this work or any of its phases?

A. I don't think I ever discussed this work with any representative of the company that I know of.

Q. What I want to bring out is this: Do you know Mr. Hawkins?

A. Yes, I know Mr. Hawkins.

Q. Did you meet him after this work had been completed as far as you went with it?

A. You mean after we finished the contract and left there?

Q. The records show you were ordered to move off the work there sometime in September, I think September 25, 1920?

A. I think I went in his office with Mr. Rajotte once or twice.

Q. Would you say that that was after that date, that is to say, after you had stopped your operations?

A. I remember going around to his office twice with Mr. Rajotte, but I couldn't get to see him.

Q. What was your purpose, or what was the idea in seeing Mr. Hawkins at that time?

A. Final settlement on the work.

Q. As a matter of fact it was after you had discontinued your work up there?

A. Yes, at that time.

Q. Did you ever see Mr. Hawkins at any of those times you attempted to see him to get a final settlement on the work?

A. Might have seen him once, but I don't remember of ever having seen him.

Q. Don't you remember of ever talking with him?

A. No. You understand I was running another job at this time, and I didn't pay very much attention to this work. Mr. Rajotte handled it here in Portland. Mr. Rajotte lived in Portland, and Mr. Hawkins had an office in Portland, and Mr. Rajotte handled him. But I remember going with Mr. Rajotte to Mr. Hawkins' office a number of times when I was up here, but never do I remember getting to see him.

Q. Did you ever see him anywhere else?

A. Sure, I saw him during this work, yes.

Q. That isn't the time I refer to. I thought you had seen him and talked to him some time subsequent to the 25th of September, the date that you stopped operations up there.

A. No, I can't remember seeing him since that.

Q. Did you ever talk to Mr. Norris?

A. Yes, I talked to Mr. Norris lots of times on the work.

Q. Did you talk to him since?

A. No, I don't remember.

Q. Pardon me for asking the question, but I understood you had.

A. No.

CROSS EXAMINATION

Questions by MR. FREED:

Q. Either on the profile quantities or on the actual quantities you said you went up to Station 546. Which was that?

A. I said in taking the quantity on the profile I went to Station 546.

Q. In other words, you went to 546 on the profile?

A. Yes, sir.

Q. That is what I wanted to get straight. Now, Mr. Winters, where did your company get a copy of this information you have put in evidence as Plaintiff's Exhibit 3? Where did your company get that so I can have it identified?

A. Why, was given us by the Whitney Company. What man in the Whitney company gave it to us, I don't know. I presume Mr. Norris.

Q. Would your records show whether a letter accompanied that, or anything of that kind. Do you know whether it was mailed to you?

A. If it was mailed to us in Portland, our records wouldn't show it. If mailed to Spokane, our records would show it.

Q. Don't you keep records of the mails sent to Portland?

A. The records here not kept as complete as at Spokane.

Q. If I sent you a check to Portland, with voucher accompanying it, wouldn't you have a record of that even though it was sent to you at Portland?

A. Probably be mailed to Spokane, if anything of importance.

Q. Would you call that of importance?

A. Yes, but a letter might not be mailed at that time. The mail might be opened here, and his taken out and mailed to Spokane, but the letter accompanying it might not be mailed to Spokane.

Q. Then you don't know from whom you got that?

A. No, sir.

Q. Must have been from the Whitney Company?

A. Must have been from the Whitney Company.

Q. But you don't know. That is just a conclusion you reach, it must have come from them because you wouldn't have it otherwise?

A. We have no way of obtaining ourselves. No, we never measure the work, put an engineer on.

Q. As far as you know, you have no record of receiving that. The only fact is you had it?

A. That is the idea, yes.

Q. You have that paper?

A. We have that paper.

Q. And you draw the conclusion that came from—

A. The Whitney Company.

Q. And that they furnished you, in other words, with an estimate?

A. That is my conclusion.

Q. You have no letter accompanying it or any explanation of any kind?

A. Mr. Rajotte may have a letter. I haven't talked that over with him. As far as I am personally concerned, I have no letter.

Q. I am talking about your company.

A. I don't know what the company has got in regard to it. May have a dozen letters.

Q. I will have to ask you to find out and tell us. You are an officer of the company. I would like to know if any letter accompanied that?

A. I can't answer.

Q. Is there anything on there to identify that as coming from our office?

A. Typewritten notation at the top "Quantities, The Whitney Company Railroad from Kilches Point to Station 576, Contract prices, actual quantities handled."

COURT: Is that signed by anybody?

A. Is not signed at all.

Q. You don't know any more about it?

A. No, I don't.

MR. DOBSON: Is it your contention it is not a correct statement of the estimate?

MR. FREED: No, I haven't made any contention yet. I will have some contention to make before the case is over. I want to identify that. I just want to know about it. He doesn't know about it.

Witness excused.

H. R. MARTIN, a witness called on behalf of the plaintiff, being first duly sworn, testified as follows:

DIRECT EXAMINATION

Questions by MR. DOBSON:

Q. Where do you reside, Mr. Martin?

A. Los Angeles, California.

Q. What is your business?

A. At present I am employed as an adjuster for an insurance company.

Q. What was your business prior to entering that line of work?

A. Bookkeeper for Rajotte, Fobert & Winters.

Q. Your occupation generally is that of bookkeeper?

A. Had been all during the time I was with Rajotte, Fobert & Winters Company, yes.

Q. Are you an accountant?

A. No, sir.

Q. Just a bookkeeper?

A. That is all.

Q. I will ask you whether or not you were in the employ of the Rajotte-Winters Company during the time they were engaged in the building of this logging road or railroad?

A. Yes, sir.

Q. Were you there all the time?

A. No, I wasn't there at the start. I went on the job about September 10, and at that time, not as bookkeeper. I went there to accept a position as timekeeper at another camp they had figured on opening about that time. I took the position as bookkeeper as I recall October 27.

Q. You went up on this work about September 10?

A. Yes, sir.

Q. And about how far had this work progressed at that time?

A. The day I arrived the steam shovel was right

opposite Camp 1. I don't recall the station number. I think it was about 132. Somewhere along there.

Q. Was it east or west of the S. P. tracks?

A. West—east?

Q. East of the track?

A. Yes, sir.

Q. Now, Mr. Martin, at the time you went there, did the Rajotte-Winters Company have a bookkeeper?

A. Yes, sir.

Q. And what was his name?

A. Mr. Rackcliffe.

Q. When he left did you take on the work he was doing?

A. Yes, sir.

Q. That is the bookkeeping?

A. Yes, sir.

Q. During the time you were there, did you have occasion to see him make entries?

A. I did.

Q. Various entries. In other words, you could identify his handwriting?

A. Yes, sir.

Q. You would know his handwriting?

A. Yes, sir.

Q. Now, just state generally, Mr. Martin, the nature and character of the entries you made on this work for them.

A. Well, I kept account of the time and distribution of the labor. I made up the payrolls, and paid off the men, made out the checks, paid all bills for supplies

and material that Rajotte & Winters got, and made distribution of those vouchers and turned that over each month to the Whitney Company.

Q. You made up vouchers for that?

A. What I have reference to as vouchers, our checks we called; every time we paid a check out for any bill, that was a voucher, because we made it up in voucher form to distribute the distribution, where different accounts to be charged.

Q. You kept a record of the money actually expended by the Rajotte-Winters Company?

A. That is it.

Q. Would that record, the sum total of that record, the total amount spent for labor, etc.—would that show the actual amount of money that railroad cost?

A. By no means, no.

Q. What other items would enter into that that you have no record of?

A. Such as powder and explosive of all kinds, and coal, and small tools and things like that the Whitney Company purchased.

Q. Why wouldn't you have a record of that?

A. I would have no way to get it. They bought that and paid for that themselves.

Q. Did they report to you from month to month for what they expended every item of that nature?

A. No, they made no report to us for what they expended.

Q. Now, by referring to these records which you kept, and the records kept by Mr. Rackliffe, I will ask you to state whether or not you are prepared to tell

the Court at this time what the total expenditures of the Rajotte-Winters was upon that roadbed?

A. Yes.

Q. And what did you take that from?

A. Took it from the poyrolls and the total number of vouchers, that were paid on bills.

Q. Have you all of those vouchers and payrolls?

A. I have.

Q. In the courtroom.

MR. DOBSON: We can introduce these all in the record.

MR. FREED: No, we have no objection, but we would like to have the privilege of checking if different from our figures. I think our figures will jibe.

Q. Now, just state to the court what your records show, what the expense of the Rajotte-Winters Company in the construction of this roadbed—on the work, were there?

A. Well, the record as I have it shows the total amount of the vouchers as the Whitney Company reimbursed us on.

Q. Just explain to the Court what you mean by that?

A. Each month I would render the Whitney Company a report showing the payroll, the net amount of the payroll which we paid the men, or total checks and, in addition to that, I would make up a list of all of the checks that we had paid on bills; wasn't much a matter of bookkeeping, just a matter of record, making up a small report. Then they would reimburse us; they would check with their accounts. If it did, they would

send us back a check for what we had been out, plus our percentage, plus five per cent on the bills we had expended, and the total of all the vouchers which they paid us was \$207,738.28.

Q. Now, you refer to vouchers. Does that mean statements made up and sent to the Whitney Company?

A. No, I mean that as a total of their checks they rendered and paid us each month.

Q. When you received one of these checks, what record did you have of the fact that they sent you this check for this amount of money?

A. What record I had? Every month we sent statement right along with it showing how that amount was made up.

Q. Did you keep that statement?

A. Yes, I kept a copy of it. The original I guess they sent to the Spokane office.

Q. Then in arriving at this amount you have taken the total of these statements?

A. That is it.

Q. Now, just what would those vouchers cover, in a general way—I don't mean detail.

A. The total amount of this voucher I gave you, that is made up as follows—that is the way distributed: Net amount of Rajotte-Winters payroll, \$141,696.49. On top of that is \$33,689.67 which was the total amount of bills paid by us which they reimbursed us for.

Q. In a general way, what would that be for?

A. Well, up until they took over the cookhouse, that would be for all groceries we bought, and for every-

thing we should happen to buy that should go on the work.

Q. That would be part of the cost of the work?

A. That is the grocery bill, meat bill, anything we paid that would be changed to the Whitney account, that is what we included. Then they paid us a percentage on the force account work. Percentage on the force account is \$616.36.

Q. Why is that? That is not work that came within the purview of the contract.

A. That is what is termed extra work, which he paid us an additional five per cent on.

Q. That was outside the contract entirely.

MR. FREED: Did you say five per cent?

A. That is additional. We had been paid the roll. That was separate work they gave us an additional five per cent.

MR. FREED: Ten per cent on that.

Q. Ten per cent on the force account.

COURT: What was the amount of the force account?

A. The amount of the percentage we received?

COURT: No, the total amount of force account. You said the company paid you two hundred and seven thousand dollars in round numbers.

A. The total amount of the force account work is \$12,687.39.

COURT: And five per cent amounted to about \$10,000 on the \$207,000. That is, the \$207,000 included that five per cent.

A. Yes.

COURT: So the work actually within the terms of the contract cost about \$175,000?

A. The actual cost of the work, yes. What I gave you was the total of the vouchers that they accepted and agreed to be paid and had reimbursed us for.

COURT: That included five per cent and force account beside?

A. Yes.

COURT: And the extra five per cent on the force account?

A. Yes, sir. And the total percentage received; that is, on the payrolls and vouchers, \$9,062.21; and total amount of the vouchers that were issued, for which we were not allowed the five per cent—as I understand it, the contract said we would not be reimbursed for oil and waste and things like that—that was \$3673. Rent of equipment was \$21,500. That makes up the \$207,000.

COURT: Have you a statement of the actual cost of the work that was in the contract?

A. I haven't any, no, sir.

COURT: To ascertain that it would be necessary to deduct \$12,687 for the force account, \$9,662 for the percentage, \$3,673 for the waste.

A. No, that amount goes to make up the cost, really.

MR. DOBSON: Just a moment. At that point I want to make a point clear. The \$21,000 for the rental was not intended, as we will show, to be a profit to us. The Contract required the defendant to furnish us a steam shovel outfit. It didn't mean profit to us.

COURT: What I was getting at was this: It has been stated that the plaintiff expected to do this at a cost of not to exceed \$100,000. Now, I am rather curious to know how much it actually cost them.

A. Wouldn't the five per cent be part of the cost? That is the way I have made my totals. I have added the five per cent. They expected to pay that. That is part of the cost.

MR. DOBSON: On that point the contract says in so many words, in arriving at the base cost which the parties contemplated would be about what they estimated, they were to include this percentage, so we are taking all these figures into consideration.

MR. FREED: That is not my view of it, but I don't want to interrupt you now.

COURT: That doesn't include the force account of \$21,000.

MR. DOBSON: No, it doesn't include the force account or the rental of the plant.

COURT: That is \$37,000.

MR. DOBSON: The situation is the same as if the defendant had to rent a steam plant from some one else.

A. I am not finished. In addition to that was \$5,-661.85, which was paid us on steel contract, laying steel, That was extra.

MR. FREED: Different contract.

A. What I am trying to do is to show you how this total amount of \$207,000 is made up.

COURT: That is what I want to know.

A. Besides that if \$499.50, which they paid us on ballast contract. That was extra contract. Then there were deductions to come from that; in order to get the total of this amount, if you add all these figures I have given you, you have got to make a deduction of \$8,-044.44, which is deductions shown on the vouchers for board of subcontractors, and tools they advanced to subcontractors. That gives us a net of \$207,738.28, which they actually paid us on our grading contract.

Q. Mr. Martin, in arriving at this figure of two hundred and seven thousand, did you deduct this ballast work, the ballast contract?

A. Yes, that is what I just told you.

Q. You deducted that?

A. No, that goes to make up the total. The only deduction made is just what I told you, sub-board and charges against the subcontractors.

Q. Then to get the amount correct, you would have to deduct the amount paid on ballast contract and the amount paid on rail laying contract.

A. On the separate contracts, yes.

Q. I don't want to include those. I want to give the Court the correct amount that we claim the roadbed cost us, by the work we did under our contract for work on the roadbed, eliminating these two items.

MR. FREED: There were two or three different contracts here. That is admitted. There is the rail laying. We paid these same people. There was a contract for laying rails and laying the ballast later, and these were some of the things the witness is referring to, to be deduction.

COURT: Including that under force?

MR. FREED: No, a different contract.

MR. DOBSON: I want it understood those are contracts in no way under controversy.

MR. FREED: I understand, but he included it in the \$207,000.

A. I included that because you asked me how much they paid us on total work, and that is how I arrived at it. Subtracting the amount that was paid us on that track and ballast contract would leave a balance of \$201,576.93.

COURT: But you haven't deducted the force account nor rent from that, have you?

A. No, sir, that is all given in that.

COURT: That is thirty three or four thousand dollars.

MR. DOBSON: We don't want it understood that we concede this rental is not a part of the cost of building this roadbed, upon this theory: If they hadn't rented our equipment, they would have to rent from some one else. They were to furnish the equipment, and, instead of renting from some one else, they rented from us. We don't want to be confused on that being for profit, fifteen hundred for the steam shovel claim. It is just the same as if we spent that twenty one thousand for labor—it is the same principle.

COURT: I understand the Whitney Company rented this plant from you, and paid you fifteen hundred a month for it. In other words, the Whitney Company were to furnish the plant, and they rented it from you.

MR. DOBSON: Yes.

Q. And now you want to include that in your cost of building this road?

MR. DOBSON: We contend that every item of expense, whether we expended it on rent, or whether we spent it on labor, entered into the cost of building this road, because in their contract, when we came to the contract—I am not certain about this rental being one of the things we are going to consider—but it covers practically every item in the expenditure as going into the cost to determine what the road actually cost.

COURT: I just want to get your view of it, that is all.

A. I might add here there is additional cost.

Q. I was going to get that. What was the total you gave after deducting the rail laying contract and the ballasting?

A. \$201,576.93.

Q. That would not include any items that the Whitney Company spent for powder and other items you know nothing about?

A. Powder and coal and groceries, and stuff of that kind, I would not.

Q. Your contract provided the Whitney Company should furnish coal and powder?

MR. DOBSON: There were certain things they were to furnish, as I understand. This is what is called a cost plus percentage. The contractor was to be reimbursed upon the total cost of the road.

COURT: Regardless of who expended the money?

MR. DOBSON: That is our theory. That is the reason we are putting in these things.

Q. While on the stand, Mr. Martin, there are some other items that might be of interest to the court. You have made a distribution, haven't you, showing where this money was actually—what it was spent for. That is, how you distributed your labor upon the various parts of the work. I will ask you to state what part of that amount that was expended by the Rajotte-Winters Company was for what we call hand and team work.

A. You mean hand grading?

Q. Yes.

A. The hand grading amounted to \$47,853.77.

Q. And have you got segregated there what amount was expended in connection with the operation of a steam shovel plant, removed by the steam shovel plant?

A. Steam shovel grading, \$63,231.46. Now, I might add there for their benefit, in case that don't check, they kept the steam shovel grading a little different. They added the blacksmith work and distributed that. I just kept a separate item. The distribution might not check, but the totals will check with them, because we checked on it.

Q. And your office expense or overhead?

A. \$5,323.64.

MR. FREED: Overhead where?

A. That was just the payroll office expense on the job.

Q. Did that overhead include any salaries to the officers of the company?

A. To the officers? No, not to the officers.

Q. Just generally, what did that cover?

A. That simply covered my expense and the time-keeper's expense.

Q. That is, your salary practically?

A. Yes, sir.

Q. I suppose that would cover money you might have spent for stationary supplies?

A. No, the Whitney Company bought that.

Q. Now, camp construction, what amount was expended for that?

A. \$5,881.36.

Q. Was that distributed?

A. By different camps, yes. That was labor distribution, total cost labor distribution at different camps.

Q. When you would submit your monthly vouchers or statements to the Whitney Company, would there appear on that statement some item or memorandum indicating that you were billing them for an added expense which you would call overhead or office expense?

A. No.

Q. Was that disclosed to them on this statement?

A. I didn't bill that, what you term bill that. At the end of each month I made up a statement which showed net payroll. Another statement showed total vouchers paid out. Then we included all the vouchers so they would check.

Q. Those vouchers which you enclosed, were the amounts of the checks which you had paid out, showed to whom paid and what for?

A. Yes, receipted bills, and have all been reimbursed.

Q. Did they keep these vouchers, or did they come back to you?

A. No, the Whitney Company kept the original bills of these things.

Q. You just have copies?

A. We just have copies.

Q. In making up this, you took from the copies?

A. Yes, I took from the copies, and our book record.

Q. Now, just state what this shows with respect to cookhouse labor.

A. Cookhouse labor was \$18,086.03.

Q. That is for the entire?

A. I can go through this, and call all the distributions for you.

Q. Just give the totals.

A. The total of Rajotte-Winters payroll was \$220,502.60. That is the total of our payroll. That is made up as follows: Camp construction, \$5881.36; office expense, \$5,323.64; moving outfit,—I mean by that moving on the job and off the job, such as that—\$1,779.56; steam shovel grading, \$63,231.46; clearing right of way, \$10,013.27; grubbing right of way, \$3,065.16; dinky track, that is laying the track for the small engines, what we call dinkys, \$5,441.41; building temporary trestle—that isn't the trestle that remains, that is simple trestle built to make the fills on, \$7,129.12; cookhouse labor, \$18,086.23; extra work, force account, \$12,687.39; barn account and team account, \$2,752.55; unloading coal, \$286.12; freighting to camp, \$1,668.11; coyote holes—which is making holes to shoot rock, we call them

coyote holes,—\$546; surfacing the track, \$7,698.07. That is going back, and keeping the track laid up in condition. Repairs to wagon road, \$189.63; blasting; \$473.26; finishing grade, \$10,473.71; contract work laying the track—that is in addition to the work we took on contract—\$7,271.81; contract ballasting was \$5,189.61; ballasting the track, not contracted, \$167.55; hand grading, \$47,853.77; moving camp \$809.07; making ferry crossing, \$9.00; man employed to hire labor, \$47.25; blacksmith repairs, \$2,435.67. I might say, your Honor, that perhaps the Whitney Company and us will not check as to distributions, but we will check on the total. They had one way of keeping and we had another, which was immaterial.

Q. There is a question which I forgot to ask. Was the amount that was paid to Mr. Sweeney on the clearing contract and the culvert contract, was that included in these figures?

A. That is not in here. The Sweeney payroll was carried separately. This is the amount of the Rajotte-Winters contract.

Q. As I understand, Mr. Martin, you carried that Sweeney payroll, didn't you?

A. Yes, we did, yes.

Q. And the Whitney Company reimbursed you for that?

A. No. the Whitney Company didn't reimburse us for that. The Whitney Company didn't reimburse us for the Sweeney payroll at all. That was simply charged against the Sweeney account, and in the monthly settlement we got, was credited to his ac-

count, but they didn't reimburse us for the money we expended on the Sweeney account.

Q. While we are on that, have you any way of referring to that account and be able to tell the Court what difference we claim to be due from the Whitney Company on the Sweeney contract?

A. Yes, the Sweeney account stands \$2,007.80 in the hole. In other words, we advanced on the Sweeney account \$13,754.33, and we received from the Whitney Company to apply on his account, \$11,746.52.

Q. In connection with that Sweeney account, did you ever have any conversation with Mr. Norris, or any one connected with the Whitney Company concerning the manner in which it was handled?

A. No, I never did. When Mr. Sweeney came on the work, either Mr. Glavin or Mr. Rajotte said we would carry his payroll, and that was all the conversation I ever had about it.

Q. And you haven't included that amount in your calculations here?

A. No, sir, that was separate. This is Rajotte-Winters that I have given you on the grading contract. The Sweeney's I have kept separate, and I have given you separate.

Q. In plaintiff's second cause of action we have alleged there is still due us from the Whitney Company by reason of money advanced, an item of two thousand and seven dollars and some odd cents, and that is the amount you are now referring to?

A. That is the amount it will take to square us up on the Sweeney contract.

Q. What I want to bring out is this: can you not recall a letter, or any talks with any one indicating that they requested you, or rather the Rajotte Company to make these advances? Was that handled by you in any way?

A. Well, yes. They never requested us, no, but when Mr. Sweeney came on the job, as I said, Mr. Rajotte or Mr. Glavin said we would handle his account.

Q. I want to know whether you ever had that information from any official or agent of the defendant in this case?

A. No.

Q. You got that information from Mr. Rajotte or Mr. Glavin?

A. Correct.

Q. But your records show that they still owe the Rajotte Company, that is the defendant owes the plaintiff, two thousand and seven dollars and what is the odd cents?

A. Eighty cents.

Q. On the Sweeney account?

A. Yes, sir.

Statements offered in evidence and marked

"PLAINTIFF'S EXHIBIT 4 AND 5."

CROSS EXAMINATION

Questions by MR. FREED:

Q. Now, Mr. Martin, from all these figures can you tell the Court what the plaintiff expended on this grading contract, leaving out the rail contract, the ballast contract, the force account outside of the contract, and the percentages we paid you?

A. I haven't prepared a statement leaving out the percentages, no.

Q. With the percentages?

A. I have them. I can get it from the statement I just gave you.

Q. From this statement it could be worked out, but you are not prepared to tell the Court the amount the plaintiff expended on the grading contract?

A. No, not until I make the proper deductions.

Q. You don't know.

A. No, sir.

Q. And where, for instance, you show in that statement that so much was paid for a blacksmith, would the statement show that?

A. Yes, sir.

Q. Where the statement shows so much was paid for blacksmith, are you prepared to say where that blacksmith worked, that is, what he was doing; that is, whether he repaired a steam shovel, or whether he helped you on the rails?

A. No, I can tell you this, that it does not include the blacksmith's work that he done on contract; that is for ballast work and for track laying, but I didn't distribute the blacksmith work on anything else. Just kept his account on blacksmith. I mean doing repair work to steam shovel or other things.

Q. What I mean is, are you sure that when you have charged for blacksmith work there it went into the grading contract, this particular contract we are all talking about?

A. No distribution of labor. That blacksmith is total amount of expense of blacksmith work.

Q. You don't know but what some of it went into the other contracts or into force account?

A. I can tell you by going through the force account bills.

Q. I mean, as far as this record goes, you don't know?

A. No, sir; that agrees with the total payroll, you see.

Q. Now, as far as your bookkeeping is concerned, it is a fact, isn't it, that the force account is something outside of the contract?

A. Yes, sir.

Q. That is what the force account is?

A. Yes, sir.

Q. Now, I used to illustrate, blacksmith, taking that just as an example. Now, taking any other special kind of work throughout this statement here, for all you know from this statement, some of that might have gone into other jobs than the grading. Isn't that so?

A. I have a separate account of a steel laying contract, money that we expended, which is given there—I think I see the point you are getting at.

Q. I want to know this. I don't want to twist you up. I want to know if everything that you have got down there would be grading contract. For instance, you put so much for blacksmithing. Are you sure that none of that sum that you have put in for blacksmithing went anywhere else except on the grading contract?

A. Yes, it did. Went on both ballasting and the other.

Q. Just to save trouble by going through each item, I might ask you if any other item than blacksmithing is in the same condition?

A. I don't recall any.

Q. I was a good guesser. I just happened to pick out blacksmithing.

A. I might say, so the Court will understand, any blacksmith work we did on their account the proper deduction was made in making settlement with us on these two separate accounts. We did keep exact account of blacksmith work chargeable to ballasting and track laying, and when making settlement of these accounts it was deducted.

Q. Take another item. You charge us in there for overhead office expense. How much of that was for the track laying, and how much for the grading?

A. I have no way of telling that.

Q. Then, as a matter of fact, part of that you have in there under office expense would be against the

track laying contract, wouldn't it? That is, part of the office expense would be due to that.

A. You can't say track laying, that it took up two minutes extra office work to do that a day.

Q. I know, but that was done at the same office, wasn't it?

A. The same office handled all of it.

Q. The ballasting contract done at the same office?

A. Absolutely.

Q. The force account came from the same office?

A. Yes, all of it.

Q. What about what you people call the cook house account? What about that?

A. Same thing. You couldn't keep a thing like that separate, would be impossible.

Q. I am not criticizing the bookkeeping, but I want to show the Court that these items, some of them that you have charged in there are not properly chargeable to this grading contract alone. That is a fact, isn't it?

A. Those items that I just gave you first, I did include the ballast as I told you, as a total on the payroll, as I called off the items how it was made up, and I didn't say whether applied to any one of them, just showed how made up.

Q. I am not saying you contracted yourself. The only way I can get it in the record is to ask you, and have you answer. How about camp construction?

A. That would apply. You don't need to pick them out. Would apply to everything.

Q. That applied to all contracts?

A. Everything.

Q. In other words, any such item that could be applicable to more than one contract applied to all?

A. I don't see how it could help.

Q. Now, that Sweeney account, have you a copy of that account? Did you put it in the record?

A. No, that didn't go in the record.

Q. Let's look at that a little while.

A. I have the Sweeney account.

Q. That shows the payments made to you, the plaintiff, on the account of the Sweeney account by the Whitney Company?

A. Yes, sir.

Q. Have you a credit entered for rebate to Sweeney for clearing tools that were returned to the Whitney Company, \$55.28?

A. No, sir; I haven't that item.

Q. Have you this item? Refund to Sweeney from State Industrial Accident Commission premiums for which Rajotte, Fobert, Winters made a claim in the sum of \$82.11?

A. No.

Q. Have you this item? Cash advanced to Sweeney in excess of salary paid him for every day he was on the work, \$350?

A. I have.

Q. You have the sum of \$350?

A. \$350 made up as \$200 and \$150.

Q. Do you have the dates?

A. Yes, I have them. May 1, advanced \$200. June 17, \$100. And October 5, \$50. I might add, with re-

spect to this: If there are some credits which you had for that Industrial Accident, that was one I added up and was in line to be paid when I turned over the books. I don't doubt that it came in. It should have come in anyhow.

Q. Have you the item of \$358 which was the final payment on the Sweeney clearing sub-contract? Payment to you by the Whitney Company of \$358?

A. The last item I have on the Sweeney contract is October 11, check for \$684.20.

Q. You have no payment for \$38.12?

A. No, no payment of \$327.76 in September for clearing.

A. The last amount is six hundred dollars?

A. I haven't got that—\$684.

Q. When I ask about this \$650 cash advanced, I mean cash advanced to Sweeney in excess of salary paid him?

A. Yes.

Q. Have you an item of this kind, not the Whitney Company paid to the plaintiff, but have you a credit?

A. A credit?

Q. \$868, being 108½ days' salary to Sweeney at \$8.00 a day. I understand you paid him a salary?

A. He was carried on the payroll, yes.

Q. He was carried at \$8.00 a day?

A. I believe the sum was \$8.00. I can tell by referring to the payroll, but I think it was.

Q. What credit have you for salary?

A. It is included in his advance. It goes to make

up the amount of the rolls we paid to Sweeney. That goes to make up the total of \$1374.

Q. You haven't that \$868?

A. Not segregated. I have it totaled in the payroll.

Q. But you people, in settling—that is the plaintiff in settling allowed Sweeney \$8.00 a day salary; that is, paid that amount.

A. He was carried on the payroll.

Q. And he was a sub-contractor?

A. Yes.

Whereupon proceedings herein were adjourned until 2:30 Monday afternoon, October 29, 1923.

Portland, Ore., Monday, October 29, 1923, 2 P. M.

H. P. MARTIN resumes the stand, for

FURTHER CROSS EXAMINATION

Questions by MR. FREED:

Q. I just have one question to ask: you said that your accounts showed—the plaintiff's accounts showed that Mr. Sweeney, the subcontractor for clearing, had been paid about two thousand dollars more than the plaintiff had received from the Whitney Company?

A. Correct.

Q. That is in round numbers two thousand dollars?

A. Yes.

Q. And I believe that your statement that you referred to—probably you answered the questions

on it—showed that to make up that two thousand dollars, or rather, included in that two thousand dollars was about one thousand dollars that was paid to Mr. Sweeney direct by the Whitney Company. Do you remember?

A. I have no record of that thousand dollars that was paid.

Q. Have you your statement that was referred to yesterday?

A. Yes, I have.

Q. I don't want to question you on anything outside of that.

A. Yes, that thousand dollars that the Whitney Company has paid Mr. Sweeney is not taken into consideration. Had we received that thousand dollars, in other words we would not be two thousand dollars behind on that account.

Q. That is what I mean. Not having received that thousand dollars, you were two thousand dollars short? I am speaking in round numbers.

A. Yes, that is right.

Q. If you had received that thousand dollars, you would only be one thousand dollars short?

A. That is true.

Q. That is the reason I am going to the elementary. I wanted to understand you. Now, Mr. Sweeney testified, as you heard, that that thousand dollars was paid to him on account of culverts.

A. I heard what he said.

Q. How do you include that, then, under your grading?

A. We carried his payroll on the culverts just the same as we did on anything else.

Q. But you don't pretend, do you, that culverts, building culverts, is part of the clearing?

A. No, that culvert working, I understood it was a separate agreement between Mr. Sweeney and Mr. Norris which I knew nothing about; we was carrying his roll right along all the time, and while he quit clearing for the time being, he went ahead and did this culvert work. I had no way of knowing what the agreement was. I assumed that we would pay that.

Q. I just want to get this, do you understand, or don't you understand, that that thousand dollars which the Whitney Company paid Mr. Sweeney direct, was on account of culvert work?

A. Yes, I understand.

Q. Now, did that two thousand dollars deficit that you spoke of include or take into consideration the fact that your company allowed Mr. Sweeney, the subcontractor, eight dollars a day salary?

A. Yes, sir.

Q. In other words, if he worked one hundred days—he worked a little more—but if he worked one hundred days and you allowed him eight dollars a day salary, that would be eight hundred dollars?

A. Eight hundred dollars.

Q. And if you had not allowed him eight hundred dollars, your deficit would be cut down eight hundred dollars more?

A. Yes.

REDIRECT EXAMINATION

Questions by MR. DOBSON:

Q. Were you up and down the work—the line there—frequently, while Mr. Sweeney was engaged upon this culvert work and fill?

A. Yes, occasionally.

Q. Just what did Mr. Sweeney do?

A. You mean, when he was making the culverts?

Q. Yes, when he was making culverts; take that first.

A. Well, he made them out of timber that he cut right on the ground.

Q. What I want to get at is this, was he engaged in physical work, or actual work of some kind, on this culvert work and on the clearing contract?

A. Yes. As I understand it, Mr. Sweeney, I believe he had men working on clearing at the same time he himself did culvert work, although I am not sure about that.

Q. Counsel brought out the fact he was paid a salary of eight dollars a day?

A. Yes.

Q. Was he doing work the same as the other men there?

A. He was, yes. In other words, if he hadn't been paid the eight dollars a day he would have had nothing.

COURT: He was a contractor, wasn't he?

A. Subcontractor.

COURT: Doing the work at so much per acre?

A. Yes.

COURT: Or per unit.

MR. DOBSON: Some of these questions I am going to ask, to avoid confusion, pertain to our second cause of action. We claim there is a balance due us on moneys advanced.

COURT: For money you paid to Sweeney?

MR. DOBSON: Yes, we were carrying Sweeney on the payroll; that is, his men. All the employes on his payroll were paid by the Rajotte-Winters Company, the plaintiffs in this case, as the men directly in their employ. The only difference was they were working under subcontract. In our contract, it was our contention the Whitney Company was to reimburse us for the money we expended, and it would not make any difference whether the men whom we paid were working for a subcontractor or working directly for us. Our contention is, we are to be reimbursed for all of this, and that is what this line of testimony I am taking up now has reference to, money we expended and not reimbursed for.

Q. Mr. Martin, I understood you to testify on direct examination just before court adjourned Saturday that your books show a balance of two thousand seven dollars and some odd cents still due the plaintiff in this case by reason of money expended for payroll on the Sweeney contract. Is that correct?

A. The Sweeney account stands two thousand and seven dollars and eighty cents, as I told you.

Q. I understood you to say just now you also

carried Sweeney's payroll account for culvert contracts as well as for clearing?

A. Yes, sir.

Q. Now, does this two thousand and seven dollars include money advanced on both contracts or does it apply to just one?

A. On both of them; money we paid his laborers on both contracts.

Q. I will ask you to state whether or not you ever had any conversation with Mr. Norris or any agent of the Whitney Company wherein the matter of this balance that was paid out for money advanced in the manner you just referred to was brought out?

A. I don't recall any, no.

Q. But that is what your records show at this time?

A. Yes, sir.

Q. There is another item, Mr. Martin, referred to on our second cause of action, I believe, referred to as the Heiner & Reed bill; just state what that was for?

A. That was for repairs done on the steam shovel and donkeys at the time that they both broke down.

Q. And just why was that charged to the account of the defendant in this case?

A. They were to pay for all repairs on the work.

Q. And that was a part of the cost of this work, was it?

A. Yes, sir.

Q. That was one of the things you were to be reimbursed for?

A. Yes, sir.

Q. Now, did you ever have any discussion with anyone connected with the Whitney Company, the defendant in this case, with respect to that bill?

A. Yes.

Q. What was that?

A. As I remember it, there was two or three different discussions and one may have been before the other, but there was one discussion and Mr. Norris thought the bill was too high, as I recall it; thought they had charged us for more hours or more material than they had actually used, and I went to Heiner & Reed's bookkeeper and one of the firm, and we checked that over, and they did reduce the bill a small amount. Then I passed the bill at that time to Mr. Rajotte to take it up with the Whitney office in here.

Q. As I understand your testimony, you first had a discussion with the Whitney Company, someone connected with the Whitney Company, with reference to the amount of this bill. Who was that conversation with?

A. Mr. Norris.

Q. Did he ask you to pay the bill at that time? That is, any part of it?

A. I don't know whether he did at that time or later. They did object, however, to paying it, as I remember, because they thought the work should have been done through their machine shops.

Q. Was that the only objection to it?

A. That and the first objection.

Q. To the amount?

A. When they thought it was too much, and we got a reduction.

Q. Why was this machine not repaired in their shop, if you know?

A. As I recall, Mr. Glavin, when the machine broke down, phoned direct to the Heiner & Reed people because he thought, or he understood, that the Whitney Company were not equipped to do that heavy repairing.

Q. Was it something that was necessary to be repaired immediately?

A. Absolutely; both broken down and not able to work.

Q. Just a matter of saving time?

A. That is all.

Q. Did you explain that to Mr. Norris?

A. Well, I think he knew that; I think he knew the conditions. He was familiar with them the same as I was.

Q. He was on the work at the time, was he?

A. Yes.

Q. Now, Mr. Martin, since you were on the stand Saturday, have you had occasion to go over the figures you submitted to the Court at that time as to the total cost of this work?

A. Yes, sir.

Q. Have you discovered any changes you would like now to make with respect to these quantities?

A. Nothing more than the total cost of the work as I look at it would be the total of the payroll.

Q. That isn't the question that I asked you. The question is this, whether or not, after you have gone over these figures, are there any revisions or corrections that you think—rather, not what you think, but whether they should be made?

A. No, I don't know of any corrections needed to be made.

Q. I understood that you had made some changes there, or I wouldn't have asked this question.

A. No, we simply arrived at it another way around was all that I did.

Q. Mr. Martin, I am not sure that this is in the record properly, but I want to be sure it is understood. Have you included the rental in making up this total figure, I think, of two hundred and seven thousand dollars, or thereabouts? That is the rent on the steam shovel?

A. Yes, the two hundred and seven thousand dollars you refer to is the total of Whitney vouchers paid us, and that included twenty-one thousand five hundred rent.

Q. Does that include the 5% on that rent, too?

A. No, sir, it does not.

Q. Any percentage or profit?

A. No percentage on the rent.

RECROSS EXAMINATION

Questions by MR. FREED:

Q. Do you know that the defendants in this suit

have notified the plaintiff that no repair work was to be done without first consulting them, otherwise they wouldn't pay for it?

A. Yes, I believe they did notify us.

Q. Wasn't that prior to this Heiner & Reed repair bill?

A. Correct.

Q. And, in spite of that you say that this was taken up direct with the people who did the work, who repaired the engines?

A. That is the way it was handled, as I recall it.

REDIRECT EXAMINATION

Questions by MR. DOBSON:

Q. Just one other question; did you include this eight hundred and thirty nine dollars, this Heiner & Reed repair bills, in the amount that goes to make up the total cost referred to?

A. No, that is not included.

Q. And you eliminated the force account work?

A. Force? Yes.

Q. And the work of the ballast contract and the tracklaying contract.

A. Yes.

COURT: You say that was excluded or included, the track and the ballast. What is this eight thousand deduction? What does that cover?

A. "Less reduction of \$8044" you refer to?

COURT: Yes.

A. That was the reduction that was made on board of subcontractors and such as that?

COURT: But you did include in the two hundred and seven thousand the rent and track and ballast?

A. Yes, the two hundred and seven thousand includes everything; total of all vouchers paid us by the Whitney Company, and I gave hereabout the last of my testimony there the totals of the track and ballast and we subtracted that from the two hundred and seven thousand dollars at the request of the Court.

COURT: You subtracted that from what?

A. The two hundred and seven thousand dollars; you decided that should not be in the two hundred and seven thousand.

Q. Then, Mr. Martin, I am not sure I understood your figures. After eliminating these contracts not included in the two hundred and seven thousand dollars.

A. No, it was two hundred and seven thousand dollars you have reference to, is the total of all vouchers paid the Rajotte Winters Company by the Whitney Company, and it is made up of the net payroll, the vouchers that were paid, and the percentage and the rental; that is how the two hundred and seven thousand is made up.

Q. Then what would be the net cost of this work after deducting these contracts? That is, the work involved in this particular contract?

A. Subtract the track and ballast, that is what I did the other day and gave the total; he has it on the statements that I turned in. The total track work

and ballast work is sixty-one sixty-one thirty-five. That deducted from two hundred and seven thousand leaves a total of \$201,576.93.

Q. And that does not include any items that may have been spent by the Whitney Company that you know nothing about?

A. None whatever. This just includes the items that we spent.

Q. Mr. Martin, I did forget to ask you this; Mr. Freed referred to the fact that certain charges, that is, blacksmith charges, were not segregated with respect to the ballast contract and track laying contract from the grading contract; have you any idea about what that would be?

A. Well, it would be very small; perhaps one month two or three dollars; they did segregate that, the Whitney Company did; they showed the charges of blacksmith work against ballast work on our vouchers.

Q. Do you recall the largest items that was ever shown on these vouchers?

A. The largest one I ever saw that I recall, I believe, was \$21.00 charge as blacksmith work against this work.

Q. On track laying or contract?

A. Yes.

Q. Would that cover both? Did you have any memorandum showing the amount in connection with tracklaying or contract?

A. Perhaps twenty dollars would cover it, six dollars one time, eight another, four another. That

would be work that the blacksmith might do welding some particular tool on that work requiring a few minutes.

MR. FREED: This Heiner & Reed bill of eight hundred and odd dollars which I questioned you about a moment ago, that is included in your second cause of action, isn't it?

A. I think it is in, yes.

Witness excused.

MR. B. J. PARKER—A witness called on behalf of the plaintiff, being first duly sworn, testified as follows:

DIRECT EXAMINATION

Questions by MR. DOBSON:

Q. Where do you live, Mr. Parker?

A. At present in Oregon City.

Q. What is your business?

A. General construction, foreman and superintendent.

Q. General construction?

A. Sub-contracting.

Q. In any particular line?

A. Why, on this case involving——

Q. I mean general construction, you mean building railroad and roadbed?

A. Yes, sir.

Q. Do you know the plaintiff in this case or his representative, Mr. Rajotte?

A. Yes, sir.

Q. You know the defendant, the Whitney Company, and Mr. Hawkins, its president?

A. I do.

Q. Do you know Mr. Norris, the engineer?

A. I do.

Q. Or who was the engineer, I believe, at the time this work was going on. I will ask you to state what, if anything, you had to do with the building of this road-bed for the defendant in Tillamook County?

A. I had the bridges.

Q. How many bridges were there?

A. Three.

Q. What were they? Just state what streams.

A. Kilches, Clear Creek and Sam Down's.

Q. You had no other bridge contracts?

A. None—well, yes, we had a logging dump.

Q. Do you recall about when that contract was made, or whom you made it with?

A. It was October 18, I believe, 1919.

Q. With whom did you make that contract?

A. Mr. Hawkins.

Q. Have you the contract with you? (Witness produces.) Is this the only writing you have had, or is that the only contract you had, that letter?

A. The one originally, no; this is just letter confirming.

Q. You had just the formal, written contract, didn't you?

A. It was a good bit this way.

Q. That is not the contract you made originally?

A. Very near the same.

Q. Was the contract made about the same date?

A. I don't know.

MR. FREED: We don't seem to have a copy.

MR. DOBSON: If you had it, you would submit it?

MR. FREED: Yes.

MR. DOBSON: No dispute as to when the contract was made?

A. I suppose not.

Q. Do you recall whether that contract was between the Whitney people and yourself or between the Ratjotte-Winters people and yourself?

A. Whitney Company and ourselves?

Q. Rajotte-Winters Company had nothing to do with that contract?

A. Nothing whatever, only I believe they recommended us.

Q. But they were not parties to the contract?

A. No.

Q. Just about when did you start to build the bridges in question on that work?

A. I believe we went on the 1st of November, 1919.

Q. And at that time was the plaintiff, Rajotte-Winters Company— At that time was the contractor, the plaintiff in this case, were they then on this work?

A. They were.

Q. Where did you start your operations?

A. On the Kilches River.

Q. And with reference to the other two streams,

was that near the beginning of the line, or was it further up the line?

A. It was up the line; I should say a mile or a mile and a half; possibly two miles; I don't remember.

Q. Sam Down's Creek was on beyond Kilches River?

A. Was still further.

Q. Further up the line?

A. Yes, the furthestest we went.

Q. The other creek still further up the line?

A. No; Clear Creek in between Sam Down's and Kilches.

Q. What were your plans as to the bridge to be built first?

A. Kilches River.

Q. At the time you went there, commenced your operations, the construction of these bridges, just where was the contractor, the plaintiff in this case? Where were they then working, do you know?

A. I believe I could tell you from the profile, somewheres near.

Q. This is plaintiffs' Exhibit 1?

A. They were about Station 206, I believe.

Q. In other words, they hadn't reached the Kilches River?

A. The shovel was in here; they were moving across this filling, I recollect;

Q. Are you mistaken? Wasn't it up further? Do you remember the cut referred to as Cemetery cut?

A. No, I don't; Cemetery cut as I remember is back here. This fill as I recall was completed and they were moving the shovel across it.

THE COURT: Across what?

A. Across this little fill.

COURT: What Station?

A. Between stations—the work was all completed to 220.

COURT: The work completed to 220 the 1st of November?

A. I think so.

Q. That is where they were working; you don't know whether completed or not?

A. No, you see the shovel was in here.

COURT: Where was the shovel?

A. Here between 210 and 220, moving across the fill that had been put in.

COURT: When you began work?

A. Yes.

Q. On the bridge at Kilches River?

A. Kilches River.

COURT: Was the shovel moved back again to 8 after that?

A. Moved back to the river.

COURT: Moved back to the river?

A. Clear to the water front.

COURT: It was moved back to the water front after that?

A. Yes, sir.

Q. What I want to get at is this: At the time

the shovel arrived at Kilches River, had you completed the construction of that bridge?

A. No, sir.

Q. How long after it arrived at that point before you had completed that bridge?

A. I don't know that I can answer that. I don't remember.

Q. Was it a day or two days?

A. Oh, yes, it was several days.

Q. You didn't keep any definite record?

A. No, sir.

Q. Do you know that they were delayed?

A. They were; they would have been delayed had they not moved the shovel back.

Q. Do you know about when they crossed the river; did they cross over your bridge?

A. They did.

Q. Do you know about when that was?

A. I don't know.

Q. When you started in, the 1st of November, was it before the 1st of December?

A. I don't remember.

Q. You don't recall?

A. No, I don't.

Q. Now, Mr. Parker, referring to the Kilches River bridge, at the time you started in your operations there, was the roadbed staked out or the center line shown?

A. Yes, sir.

Q. How was that shown?

A. You mean at the bridge site?

Q. At the bridge site, yes.

A. By line of center stakes.

Q. By line of center stakes. After you started in operation there, were there any changes made in these center line stakes?

A. At Kilches River?

Q. Yes.

A. No, sir.

Q. Was that bridge built just as you had originally contemplated building it?

A. Yes.

Q. With respect to the grade or line of the road-bed?

A. Oh, a few minor changes, but none in the alignment.

Q. Now, the next bridge you built, where was that?

A. That was at Clear Creek.

Q. And that was about at what station, if you remember? I think that is identified sufficiently, though, by Clear Creek.

A. That would be at 330.

Q. 330?

A. 330 on this profile.

Q. Now, about when did you start building that bridge?

A. I think it was in February.

Q. Of what year?

A. 1920.

Q. Now, were there any—at the time you started

in building this bridge, had the grade and right of way been established at that point?

A. There was a change in Clear Creek.

COURT: What?

A. There was a change of alignment at Clear Creek.

Q. Can you state to the Court the substance of what that change was?

A. You mean the distance in feet from the original ?

Q. Just what you know about it.

A. The reason I know there was a change, because we helped clear the right of way after getting there. We used the donkeys and chucked out of that right of way. You see, the right of way had been cleared, and the stuff piled to one side in a wind-row. We afterwards moved that.

COURT: About how far did you move it?

A. About 30 feet; however, that wouldn't have any bearing on the line generally, because we moved it outside of the right of way.

Q. What I am trying to get at is, what change was made, if any that you know of, that would affect the work of the contractors in this case with respect to building up grade or line at that point?

A. Well, the alignment, of course, would affect their grade; the alignment was straightened on the bridge, so the bridge would be on a tangent; it would naturally go further back on the grade there one way or the other from the bridge.

Q. You say you commenced construction on that bridge in February, 1920?

A. I believe that is it.

Q. Was that bridge completed at the time the contractors arrived at that point to proceed across to the upper part of this work?

A. No, sir.

Q. About how much delay was encountered there approximately?

A. It has been three years; quite a strain on the memory, but I should say a week.

Q. About a week's delay. Now, passing on to the next place, which I understand was Clear Creek—

A. Sam Down's.

Q. Sam Down's; that is about what station, do you remember?

A. It would be at 380, along about.

Q. 380. Were there any changes made there with respect to the line or grade or roadbed that you know of?

A. I believe there is a curve taken out at Sam Down's Creek.

Q. There was a curve taken out. How much move one way or the other would that cause?

A. I couldn't say.

Q. You have some idea; was it any considerable amount, or just a foot or two?

A. Well, I don't know as to that.

Q. Did you know was a change made?

A. Those changes, as I remember, were all on the curve.

Q. As they are now?

A. On the old profile, but afterwards straightened.

Q. Does the original profile show those bridges on curve?

A. Yes, sir.

Q. And when they actually put the bridges in, they straightened the roadbed?

A. They straightened the alignment at the bridge or across the bridge.

Q. So as to straighten up the bridge?

A. So as to straighten up the bridge, yes, sir.

Q. Now, Mr. Parker, about when did you start the construction of the bridge on Sam Down's Creek?

A. I believe this was in April.

Q. April of what year?

A. 1920.

Q. Was that bridge completed at the time the plaintiff in this case, the contractors, arrived at this point to go on beyond that creek?

A. No, sir.

Q. Did I ask you about changes made at that creek? Were there—

A. Yes, in the alignment; not in the grade.

Q. Just in the alignment?

A. The alignment, yes, sir.

Q. Did those changes, if you know, in any way change the nature, amount of character of the work done by plaintiff in this case, if you know?

A. They necessarily had to change it.

Q. And what do you remember about that? That is what I want to get at.

A. Well, I know but very little about it, as to what quantities.

Q. I wasn't asking you to state the quantity, but did they have to make an extra fill or extra cut or what was the situation?

A. Well, I don't know; it would either reduce the amount of his cut, or lessen it—that is, it would be more or less, I mean.

Q. All you know is you know that the grade was changed there, or the alignment?

A. Yes.

Q. When you made this contract with the plaintiff in this case, you think it was sometime in October, 1919?

A. The 18th of October, 1919.

Q. So this contract was made in October, 1919?

A. Yes, sir.

Q. Was there any conversation between you and Mr. Hawkins with respect to the time you were to proceed with the construction of these bridges?

A. Only this letter.

Letter offered in evidence, received without objection and marked PLAINTIFFS' EXHIBIT 6.

Q. Now, Mr. Parker, referring to Plaintiffs' Exhibit 6 which is a letter directed to you by the Whitney Company, with the signature of Russell Hawkins, I will ask you whether or not you had any conversation with Mr. Hawkins prior to this time with respect to building these bridges?

A. No, sir, Mr. Shay would be the man who handled that.

Q. Did you have any conversation with him subsequent to that time?

A. No, sir.

Q. Do you know when the negotiations started between your Company, Shay & Parker, is that the name of the company?

A. Yes, sir.

Q. And the Whitney Company with respect to the building of these bridges?

A. No, I don't.

Q. You don't know about that?

A. No, sir.

Q. They began sometime prior to the date of this letter?

A. Oh, yes.

Q. Have you any idea about how long?

A. No, I don't.

Q. About how long were you engaged in that work, all told?

A. Until November, 1920, I believe.

Q. You were there, then practically a year?

A. Yes.

Q. Did you have any other contracts with the Whitney Company for any work other than that?

A. May I change that last answer?

Q. Yes, if it is not correct.

A. You were asking me how long I was there on those bridges?

Q. Yes.

A. We were done there in June on the bridges, the other was log dump.

Q. Did you have any other contracts with the Whitney Company with any other work?

A. Had this log dump also foundations for the—

Q. That log dump was in the mouth of the river?

A. No, that would be in the Bay.

Q. That had nothing to do with the contract between the plaintiff in this case and the Whitney Company?

A. No.

Q. When did you start your work on the log dump? About the same time as the other or prior?

A. No, that was later, about September, I believe.

Q. Did you have any contract with the Whitney Company for any work along this roadbed other than what you have mentioned, which you were doing or carrying on at the time you made the contract for the bridges?

A. No, sir.

Q. What was the first work you did up there?

A. The first work was the Kilches River bridge.

CROSS EXAMINATION

Questions by MR. FREED:

Q. You are working as a subcontractor under Mr. Rajotte now?

A. No, I am working as foreman.

A. Sir?

A. I am working as foreman for him.

Q. You are in his employ now?

A. Yes, sir.

Q. Did Mr. Rajotte get a per cent of your pay in this bridge work?

A. He did.

Q. Tell the Court how much Mr. Rajotte got from you as a rake-off out of this?

A. He furnished me the money, understand, and if I made a profit, he was to get ten per cent.

Q. Do you remember how much you paid him or what profit you made? We can figure it out from that.

A. No, I don't know exactly.

Q. Don't have any idea?

A. Well, I wouldn't know offhand, no. I could possibly check it up.

Q. You don't know now?

A. No, I don't.

Q. You wouldn't know, would you, whether one hundred dollars or a thousand dollars; could you give us any idea?

A. Would be somewhere in the neighborhood of eighteen hundred dollars, I believe.

Q. I just want it roughly. Was that the commission or what you got? Was that what you got or what you paid Mr.—

A. Mr. Rajotte.

Q. What you paid Mr. Rajotte. You say there was a contract between you and Mr. Hawkins?

A. Yes.

Q. Was it a letter?

A. Yes, it was a letter.

Q. You wrote him a letter or he wrote you?

A. He wrote us.

Q. You had talked to him orally about the bridges?

A. Mr. Shay?

Q. Someone from your company talked with him?

A. Yes.

Q. And he wrote you this letter telling you to do the work?

A. Yes.

Q. You don't know how long before this letter, do you? You don't know how long it was?

A. No, I don't, must have been very shortly before that letter was written.

Q. Let me read this letter to you, letter on the stationery of the Whitney Company, 907 Lewis Building, Portland, Oregon, dated October 19th, 1919.

Shay and Parker,
C/o Rajotte-Fobert & Winters,
Bay City, Oregon.

Dear Sirs: On the basis of our furnishing all the material at the bridge site, we accept your bid for the following unit prices: Piling 25 cents per lineal foot in leads. Lumber, twenty-five dollars per thousand foot in place. These prices are to include all driving and placing of all iron, and all labor incidental to finishing complete the bridge structure at Kilches River, Clear Creek

and Sam Down's Creek. Mr. Rajotte of Rajotte, Fobert & Winters assures me that your men will be boarded at going prices per day per man. We urge you to start this work as promptly as possible and we are giving you the contract based upon your starting your machinery over there within a very few days. We sincerely hope our relations will be pleasant and we will do all we can to aid and assist you."

Wasn't this the contract—it is of no particular importance?

A. No, I think there was another one. I believe I got that after going to Bay City.

Q. Well, it is no different from this, is it?

A. No.

Q. We have no other copy; that is the reason.

A. No different.

Q. Now, Mr. Hawkins is urging you in that letter to do all you could to get the bridges done, wasn't he?

A. Yes, sir.

Q. Do you know of anything that Mr. Hawkins or the Whitney Company, the defendant in this case, did to keep you from getting the bridges along?

A. The Whitney Company were supposed to furnish that material to the bridge site, which they didn't do.

Q. What do you mean at the bridge site?

A. That would mean where the bridge was to be driven or built.

Q. Who furnished it there? Who brought it up there if they didn't?

A. The Rajotte-Winters Company brought most of it.

Q. You remember Mr. Henry Sauce?

A. Yes.

Q. Did he ever bring any of it out?

A. Yes, sir.

Q. For whom was he working?

A. He was working for Whitney. I am talking about Kilches River; that is the first bridge.

Q. You are taking the bridges one at a time?

A. Yes, the Kilches River bridge.

Q. You were there, ready to work but couldn't.

A. Oh, no, were not ready to work, but we were detained. The stuff came out piecemeal, you understand.

Q. How much delay would you say you were caused?

A. Well, it would be hard to say.

Q. How long were you building the Kilches River bridge?

A. We were there a month or better.

Q. Out of that month, how long did the Whitney Company delay you?

A. Well, I would make a guess of five or six days.

Q. They delayed you in five or six days. In other words, you would have finished the bridge five or six days sooner if they had had the lumber at the Kilches?

A. I would think so.

Q. Why didn't they have it there, do you know? You were down there; do you know? Do you have any idea?

A. I don't think they had the facilities for taking it there; it had to be hauled in on wagons.

Q. That roadbed was not in condition then as I understand it, for the Whitney Company to bring it up on the roadbed?

A. No, sir.

Q. Who is building that roadbed?

A. Rajotte-Winters.

Q. Kilches is the first bridge?

A. Yes.

Q. What was the steam shovel doing during the Kilches delay—during that time?

A. I believe they were taking that to do some ballasting.

Q. I understood you to say that during that time they did go back on the shovel work?

A. Yes, sir.

Q. They were not standing there waiting to get across, then?

A. No.

Q. Now, at Clear Creek how long was the steam shovel delayed?

A. I would imagine somewhere in the neighborhood of a week.

Q. Let me ask you this: See if this refreshes your memory: Suppose our records would show that the shovel was delayed at Clear Creek three working

days and one Sunday, April 2nd, 3rd, 4th and 5th, 1920?

A. That might be true.

Q. I mean, of course, you are not trying to falsify. I wonder if you can remember anything about that?

A. No.

Q. That wouldn't help you to remember whether they were delayed a long time or a little time?

A. No, sir.

Q. What was the steam shovel doing when it was delayed at Clear Creek? Was it standing there?

A. I think so, yes, sir.

Q. Do you know whether or not it was being repaired during that time?

A. I believe the repairs came later.

Q. You don't know?

A. I don't know, sir.

Q. You can't say that the repairs were not being made on it at that time?

A. No, sir.

Q. You know that at intervals steam shovels have to be repaired, don't you?

A. Yes, sir.

Q. And they have to be shut down and taken off the work at that time?

A. Yes sir.

Q. And, if it is a fact—I don't commit you to that—but if it is a fact that the shovel while waiting to cross over Clear Creek bridge which you were building, was being repaired, then you wouldn't say

that it delayed the Rajotte people very much, would you?

A. Well, I don't know that it was being repaired.

Q. No, I know you don't. But, if it is a fact that it was repaired during that time, you wouldn't say that it delayed the Rajotte people?

A. No; that is, if it was necessary.

Q. I presume they wouldn't make them on our money if it wasn't necessary. At Sam Down's Creek, how long would you say that the shovel was delayed?

A. I don't remember.

Q. Well, if our records show, and if we establish before the court, that the shovel was delayed four working days, August 20th, 21st, 23rd and 24th—evidently a Sunday in there—1920, would that recall anything to you as to the time?

A. That probably is right. My recollection would be that that delay was a little longer than that.

Q. Then you think the delay was longer than that?

A. Yes, sir, I think so.

Q. Do you remember what the shovel was doing during that delay?

A. I believe it was being repaired there.

Q. That is your impression, it was being repaired?

A. I think so.

Q. Now, at Sam Down's Creek are you certain that the delay occurred while you were at work on the bridge at Sam Down's Creek?

A. I think so.

Q. Was any delay caused when you were across the bridge building that trestle—what did you call it, the approach or temporary trestle?

A. Temporary trestle, that must have been what was holding us.

Q. Then, you mean to tell the Court now, that the delay was in building a temporary trestle, not in building the bridge proper, is that it?

A. It would be practically the same.

Q. I would like to have you divide that to the Court; I put a good deal of significance in it.

A. I am not sure. I think at the time we were building this temporary trestle decking was being put on the permanent structure.

Q. But you are not prepared to say, then, which I thought you meant to say at first just now, that delay occurred when the temporary trestle was being built?

A. No, no, I am not.

Q. You are not prepared to say that the delay was not caused by your work on the temporary trestle?

A. No.

Q. I am sorry you haven't what you call your contract; I was going to ask you—you probably know anyway—was there anything in your contract which called on you to build the temporary trestle?

A. No, sir; no, sir.

Q. When you built the temporary trestle whom were you working for?

A. I believe for Whitney Company.

Q. Why did you build the temporary trestle if the contract didn't call on you to build it?

A. It was necessary to build this trestle in order to get the steam shovel across; it would really be a continuation of the main bridge.

Q. But the contract was for building a bridge?

A. Yes, sir.

Q. And not for building temporary trestle. The Court is not a bridge builder. I want him to understand if it is a fact there is a difference between a temporary trestle and a bridge?

A. There is, yes.

Q. Tell the Court what a temporary trestle is.

A. A temporary trestle, I believe, at the end of this bridge, if the shovel were moved out to the end of this bridge, it would be somewhere in the neighborhood of twenty feet in the air. In order to get it over where the borrow pit or the next cut would be, you would have to build something to let it off on, and that was the occasion for this temporary trestle, as I understand it.

COURT: The space where the temporary trestle was, was that subsequently filled with earth?

A. Yes, sir.

Q. You don't know whether or not the Rajotte-Fobert-Winters Company, the plaintiff in this case, paid you for building the temporary trestle?

A. I don't think they did.

Q. That is, they didn't pay you directly; I understand that; but you don't know how that was handled

between the Whitney Company and the Rajotte people, do you?

A. I am quite sure that Mr. Norris asked me to build the bridge—do the temporary work.

Q. I mean to ask you, you don't know as between the two, how that temporary trestle work was handled, do you?

A. I do not.

Q. Have you ever read this contract between the Whitney Company and the plaintiff in this case?

A. No, sir.

Q. Do you not know that you were paid force account plus ten per cent for the building of the trestles?

A. Yes, sir.

Q. Were you paid any different for building trestles than you were for building the bridges?

A. You mean for the temporary work?

Q. Yes.

A. That was cost plus ten per cent temporary work.

Q. How were you paid for the bridges?

A. On the contract as you just read it.

Q. You built the temporary trestles under a different plan?

A. Yes, sir.

Q. You got cost plus ten per cent?

A. Yes, sir.

Q. You understand that is what builders call force account, don't you?

A. Yes, sir.

Q. You understand that?

A. Yes, sir.

Q. Who sent you your check for that?

A. The Whitney Company paid us.

Q. And added ten per cent; reimbursed you plus ten per cent?

A. Yes, sir.

REDIRECT EXAMINATION

Questions by MR. DOBSON:

Q. Now, these temporary trestles you refer to, Mr. Parker, isn't it a fact that you had to construct some of these temporary trestles in connection with the building of these bridges?

A. One at Sam Down's we had to build in order to get on the bridge.

Q. In other words, that was a part of the bridge building, was it not?

A. Yes, sir.

Q. You had to use that to get your pile driver out to the bridge part of it?

A. Yes.

Q. Mr. Freed asked you the manner in which you were to get your materials down to this bridge; at the time you made this contract with the Whitney Company, did they tell you that the material had to be hauled over this roadbed that the plaintiff was grading in this case?

A. No, sir.

Q. How were you to get the materials there?

How did they contemplate getting them there? Wasn't there a wagon road?

A. Was a wagon road, yes.

Q. Were any of the materials hauled by team or wagon?

A. Yes, sir, most of the bracing and caps were hauled by team and wagon; what I want to get, Mr. Parker, would it have been possible to construct these bridges if there had been no railroad in there?

A. Would have been quite difficult to get the stringers in.

Q. What part of these bridges could you have built and had ready before you would need what you would call the stringers?

A. You would have all the piles driven and capped, capped and braced. You would have it all done but the decking.

Q. What part of that would require the most time?

A. The driving and bracing.

Q. Would it have been necessary to have a railroad in there to do the piledriving?

A. No; the piledriving was done before the railroad was in.

Q. Now, you say that Mr. Norris asked you to build this temporary trestle; was that the Clear Creek or the Kilches?

A. There was a little one at Sam Down's and also at Clear Creek.

Q. The Rajotte-Winters Company didn't ask you to do this, did they?

A. I don't think they did; I am quite sure they didn't.

Q. At the time Mr. Norris asked you to build these temporary trestles, did he state to you the reason?

A. Mr. Norris, as I remember it, asked me to build one at Sam Down's Creek, the other one I built on my own in order to get the piledriver out, you see.

Q. That was your own work?

A. Yes.

Q. Part of your bridgebuilding work?

A. Yes.

Q. Aside from the one Mr. Norris asked you to build, and this one you had to build in connection with your own operations there were not others built, is that true?

A. We built small ones, that we built for the Rajotte-Winters Company.

Q. Which one of the bridges was that?

A. Short, temporary trestle.

Q. Wasn't in connection with either one of these?

A. No; wasn't a bridge.

RECROSS EXAMINATION

Questions by MR. FREED:

Q. Mr. Parker, don't you think that the Whitney Company was doing all it could to further and hasten the building of these bridges?

A. I believe they were very anxious to get it done, yes.

Q. Didn't they pay force account, extra that is to say, for moving your outfit from one bridge to another at one time?

A. They paid me for taking part of the bridge up.

Q. That is, moving it up there?

A. Yes, I took part of my material with me.

Q. That was pretty expensive on the Whitney Company, wasn't it?

A. I believe that was less than what they afterwards paid for the balance of it.

Q. That showed they were not holding back on account of expense, didn't it?

A. I would much rather have taken the whole bridge as I went, the first pull, had it in there.

Q. Did you at any time request anything of the Whitney Company that would hasten your work, that you didn't get? Did they refuse to do things for you?

A. No, no, just a matter of time; it wasn't being done on time.

Q. What wasn't being done on time?

A. This material; for instance, even at Clear Creek we waited for material, and at Clear Creek Mr. Sauce brought up part of our piling.

Q. How did Mr. Sauce bring that up?

A. Floated it up the river with a horse.

Q. Did he have to do that?

A. That's about the only way he could have gotten it there.

Q. Is that a slow or a fast process?

A. It is slow.

Q. That was about the only way you say you could bring up material to that point?

A. Yes.

Q. To bring it up the bed of the river?

A. Yes.

Q. Tell the Court what the Whitney Company did to get that out there; just what the man did to bring it out?

A. Brought it out with a horse, I think, about four or five piles at a time, with a cable, some hundred and fifty feet of cable, he would hitch the horse to this line in the shallow spots; stretch his line out to catch each shallow spot in the stream. The horse went up the river bed dragging this piling.

Q. Did you ever see any greater effort made to bring up piling than that?

A. Yes.

Q. What?

A. It was quite a difficult proposition.

Q. There is no question about that?

A. Nothing at all.

Q. By paying more, the Whitney Company couldn't have gotten that up there any more rapidly?

A. I don't—they might have put on more help—they might have put more help in; by using two or more horses it could have been done faster.

Q. That is to say, if you had used twenty-five men on your bridge, where you used two, you could have finished the bridge more rapidly?

A. Yes.

Q. Or if the Rajotte-Winters had put on a hundred and twenty-five men on their job and say they used one hundred, they could have finished there faster?

A. Exactly.

Q. I will put the question this way; since you were down there to observe it.

COURT: Didn't the Whitney Company show that it was trying to co-operate to get this thing done, or did it?

A. The fact remains that it wasn't done.

Q. You can answer no if you think they didn't.

A. Well, they had this one man, and one horse, hauling the piling.

Q. You don't think, then, that the Whitney did do, that is what you are saying—you don't think they did co-operate?

A. Well, they could have by putting more force on.

Q. Well, just as you could build your bridge faster if you would put more on—you could have saved that five days; did you expect them to put more men coming up the river?

A. I did.

Q. Did you tell them that?

A. Absolutely.

Q. Who refused? Who did you tell that?

A. Mr. Norris.

Q. You told Mr. Norris he ought to put more men bringing this up the river?

A. I told him we were short of material.

Q. Did you tell him he ought to bring? What did you tell him?

A. I told him we were short of material and we needed it; it was laying us idle, you see.

Q. What did he say?

A. I don't remember.

Q. I would like to get that conversation. Mr. Norris is going to be on the stand a little later in the case. You said to him that you were being delayed, that you were delayed because you didn't have enough material up there?

A. Yes, sir.

Q. Did you suggest to him how to get it up the river?

A. I did not.

Q. How did you expect to have that material brought to you?

A. That was none of my work.

Q. I know that, but you must have had expectations as to how to get that stuff up there.

A. When we went up there, if we could have had the entire bridge, I believe we could have taken it up with one pull of the drivers. We took part when the driver went up, by building a raft of part of the material and putting the driver on, and pulling ourselves up with our own steam. We trailed two rafts of piles behind us.

Q. Is that the first bridge you talked about, the Kilches?

A. At the Kilches River the stuff was hauled out by wagons. And as I remember it was possibly eight or ten piles on the ground when the driver got there.

Q. And you and your crew sat idle while waiting for the material?

A. No, in cases got our own material.

Q. Where did you get that?

A. Went there and hauled it up.

Q. Got paid for that?

A. Yes.

Q. The Whitney Company paid you?

A. Yes.

Q. What about the next bridge? That was the first bridge you spoke about, that was the Kilches River bridge?

A. Yes, sir.

Q. What about the next one, Clear Creek?

A. The next one is where—

Q. Yes, Mr. Sauce.

A. Yes, Mr. Sauce's part.

Q. What about Sam Down's bridge?

A. I think Mr. Sauce brought that up also.

Q. What was your crew doing while you were waiting to get the material? Did you just sit idle?

A. In some cases, yes, sir.

Q. All your crew?

Y. Yes.

Q. You don't remember how long you sat idle?

A. No, sir, I don't.

REDIRECT EXAMINATION

Questions by MR. DOBSON:

Q. Your crew was not being paid unless they were working, were they?

A. No, sir.

Q. As I understand, you had those contracts at so much per bridge?

A. In the event the crew were idle for some portion of an hour or two hours they were not docked that time.

Q. What I want to bring out, would the Whitney Company lose this time that they were not working?

A. No, it would be myself that would lose it.

Q. It would be your loss?

A. Yes, sir.

Q. Mr. Freed asked you, and I think you answered rather quickly, without considering, made the statement if the plaintiff had put on more men up there they could have put on their work quicker. You are not informed about that in detail?

MR. FREED: He said he was.

MR. DOBSON: I am asking; I don't think he understood.

A. You mean—

Q. Well, the work as a whole?

A. Why, most assuredly.

Q. What you mean to say, if they put on more men to do the work that would be done by steam shovel?

A. Any job if you double the crew.

Q. Would have to put on two steam shovel plants, too?

A. I presume.

Q. In other words, there is a limit to the number of men you can work on a steam shovel plant?

A. Yes.

Q. And you wouldn't expect them to go up there and do the work by hand they could do with the steam shovel, would you?

A. No.

Q. Now, the organization or getting prepared to carry on operation of that kind, having everything taken into consideration, you decided upon the equipment you were going to use and carry to meet the condition, don't you, in the beginning?

A. Yes, sure.

Q. Having in mind the work you were going to do?

A. Yes.

Q. After having done that, would there be any economy in doubling up the crew?

A. I wouldn't see any economy around a steam shovel.

Witness excused.

WILLIAM McKINLEY, a witness called on behalf of plaintiff, beign first duly sworn, testified as follows:

Questions by MR. DOBSON:

Q. What is your business?

A. I am connected with the Whitney Company.

Q. Are you in their employ at the present time?

A. I am.

Q. Were you in their employ at the time the plaintiff was engaged in the construction of the roadbed in Tillamook County?

A. I was.

Q. And what were your duties at that time?

A. I was in charge of the Portland office.

Q. What particular work did you do there?

A. Well, I did the buying and looking out for the accounting end.

Q. What I want to get at is, were you in charge of the accounting?

A. It was done under my direction, yes.

Q. Are you familiar with the books of account of the Whitney Company?

A. I am.

Q. And are you able to identify the handwriting in the books if they were kept in that manner, or did you do the actual bookkeeping?

A. No, but I am familiar with them.

Q. Are you able at this time by referring to your books to give us a statement of the cost of the construction of this roadbed that is insofar as the work was done by the plaintiff in this case—the cost of the work done by the plaintiff?

A. I can give—I don't know as I exactly understand.

MR. FREED: Use the statement that you made

up. Maybe he can answer your question; he made up a statement.

Q. Did you make up a statement showing the cost of the plaintiff's operations in connection with the building of that roadbed?

A. I made up a statement of the amount we reimbursed them for, and what we paid them, what their cost might have been; I have a statement of that.

Q. Do you have it where you can get it?

A. I have it there.

Q. In the court room?

A. Yes.

Q. You heard Mr. Martin's testimony, didn't you?

A. I did.

Q. Heard his testimony as to the amount of vouchers that were paid by your company?

A. I did.

Q. Was the amount substantially correct?

A. Substantially correct. Some slight variation.

Q. Now, you heard Mr. Martin state in detail what items he considered to make up that amount, that is to say, labor?

A. I did.

Q. Are there any other items which were expended in connection with the plaintiff's operation here which you show that he didn't mention?

A. Well, I don't believe so; I haven't checked it in that respect.

Q. Have you any record as to the amount of coal

that was purchased for the work that was being done by the Rajotte-Winters Company to keep their steam shovel going?

A. You mean what we ourselves purchased?

Q. Yes, in connection with their operation.

A. I haven't that record, no; I have the record of the amount we reimbursed Rajotte for what he had paid for coal.

Q. Isn't it a fact that you purchased certain materials, certain articles, which under your contract with plaintiff you were required to furnish?

A. We did.

Q. You purchased that direct?

A. I did.

Q. And by handling in that manner there was no necessity for reimbursing the plaintiff, that is, you wouldn't reimburse him for that?

A. No.

Q. Weren't those things that you purchased added to the cost of the work?

A. They were added to the cost of the railroad, yes.

Q. Weren't they added to the cost of the work that was done by the plaintiff in this case?

A. They weren't, no.

Q. Weren't those things—

A. That is, those purchases added to the payments to Rajotte went to make up the cost of the grade, yes.

Q. The plaintiff was operating a steam shovel

plant, was it not, during all the time it was engaged upon this work; isn't that correct?

A. Yes, practically.

Q. Isn't it a fact that the Whitney Company purchased the coal, furnished the coal, for that steam shovel plant?

A. All but an initial car or two.

Q. Do you have any idea as to the amount of money that was expended by the Whitney Company for coal during that time the plaintiff was building this roadbed, or can you refer to your books and get that amount?

A. I can, yes; I haven't it in my head.

Q. This statement that you have prepared, have you segregated those items in any way so you could refer to them readily at this time?

A. I didn't segregate them with that idea in mind; the segregation that I have made is made up for the purpose of showing what was paid to the plaintiff and detail of that.

Q. Now, in the answer filed by defendants in this case to plaintiffs' complaint the allegation is made that the total cost of this roadbed was a hundred fifty-six some odd thousand dollars. Did you have to do with making up those figures?

A. Yes, sir.

Q. Now, in arriving at that amount, did you include the amount that was expended by the defendant for coal?

A. No, sir.

Q. Did you include the amount that was ex-

pended by the defendant for groceries, for the camps of the plaintiff?

A. No.

Q. And did you include the amount expended for powder, explosive powder for blasting purposes?

A. There is nothing included in that that is not included in the reimbursement to Rajotte-Fobert and Winters.

Q. Can you refer to this sheet you made up and tell the Court how much you reimbursed the plaintiff for in this case on their payroll account?

A. No, the segregation wasn't made that way. We lumped everything, this payroll and what vouchers they presented, and added them together, and the statements I prepared, as I say, were not prepared with that in mind.

Q. Now, Mr. McKinley, do you recall at the beginning of the work when the plaintiff started this operation there, that for a time they purchased their own groceries?

A. They did.

Q. And you reimbursed them for the groceries they purchased?

A. We did.

Q. The same as you reimbursed them for labor?

A. Yes.

Q. Isn't it a fact that later the Whitney Company decided to purchase the groceries on its own account?

A. They did.

Q. And deliver them to the plaintiff?

A. They did.

Q. You are not able to state at this time, or can you refer back, and state the amount paid by defendant for groceries subsequent to the time the buying of groceries was taken over by defendant?

A. Before I answer any line of questions along this line, Mr. Dobson, I would have to be prepared. I haven't gone into that along that line.

Q. I am not trying to get you into any difficulties.

A. I know you are not, but I am explaining I can't do it.

Q. I understood you had made detailed statement of the various items that went into the cost of building this roadbed, or rather, the work that was done by plaintiff.

A. I have, but along another line; it doesn't go into the details you are asking for.

Q. Did you segregate the ballast contract and the rail laying contract in this amount incorporated in defendant's answer?

A. They were excluded.

Q. They were excluded?

A. Yes.

Q. I will ask you whether or not you can, before the close of this case, or say tomorrow morning, furnish me a statement defendant expended for groceries and for coal and for blasting powder and other blasting materials during the time the defendant was engaged on this work?

A. Yes, I can.

Q. Can you have that in the court room tomorrow morning, or could you get it this afternoon?

A. It would take two or three hours to make it up.

Q. Take how long do you say?

A. Take two or three hours to make it up.

Q. You could have it by tomorrow morning?

A. Yes, I think so.

Q. Now, in the beginning, when you reimbursed the plaintiff for the purchases they had made, particularly the groceries, did you add a per cent of profit to the amount of these purchases?

A. We did.

Q. Did you, after this work was taken over, or rather after the purchase of groceries and supplies was taken over by your company, did you make any accounting to the plaintiff with respect to the percentage on groceries and other items that you paid?

A. Well, we had some correspondence concerning these supplies, but as to strict accounting, I don't know whether we ever did. We were paying out the money, and I don't remember whether or not we did ever give them a complete statement of it.

A. Well, you will be able to give me that statement tomorrow, you think?

A. I can give you the total.

Q. Just the totals for groceries, blasting materials and coal.

A. Yes, sir.

MR. DOBSON: That is all at this time, reserving the right to recall Mr. McKinley for that purpose tomorrow morning.

CROSS EXAMINATION

Questions by MR. FREED:

Q. Why did the Whitney Company see fit to take over the purchase of groceries in this case, tell the Court?

A. Because the contractors were buying them from a little retail store down there, and paying excessive prices, and we didn't figure it was good business and for that reason we took it over and bought them wholesale, thought to save money.

Q. The contractor was buying them from a store where?

A. At Bay City.

Q. Buying them at a retail store?

A. Yes.

Q. Where did the Whitney Company buy them when they took over that part?

A. We bought them from a wholesale house in Portland, Mason-Ehrman Company.

Q. Do you know approximately what was saved on groceries by that?

A. Well, a big percentage. I am not prepared to answer that definitely.

Q. You have read the contract?

A. I have.

Q. Does the contract provide in respect to whether or not any percentage profit was to be paid to plaintiff on account of fuel and blasing powder, for instance?

A. It provides specifically that no percentage was to be paid.

Q. That is, no percentage profit was to be paid for it?

A. No percentage profit was to be paid on those items.

Q. And that is the reason that was not included in the answer?

A. Yes.

Q. Now, I want to go back to the question I asked you a few moments ago, in regard to the reason for the Whitney Company taking over this grocery account. Will you explain to the Court, if you know, the operation of what you people call the cookhouse under the plaintiff in this case which required you to take it over?

A. Well, the whole—

Q. That is, amplify your answer that you made a while ago.

A. The cookhouse was being run at a loss, and one of the causes of the loss was the excessive prices paid for groceries and supplies, and was with the object in mind of cutting out that portion of the loss and saving money, of course, that we took that over and bought the groceries ourselves.

Q. Well, was the cookhouse after that operated at a loss?

A. I don't know, Mr. Freed, whether it actually came out of the red, but we operated at a considerable less loss. Whether or not it ever got out completely, I can't say without reference to the record.

Continued in Vol. II.

